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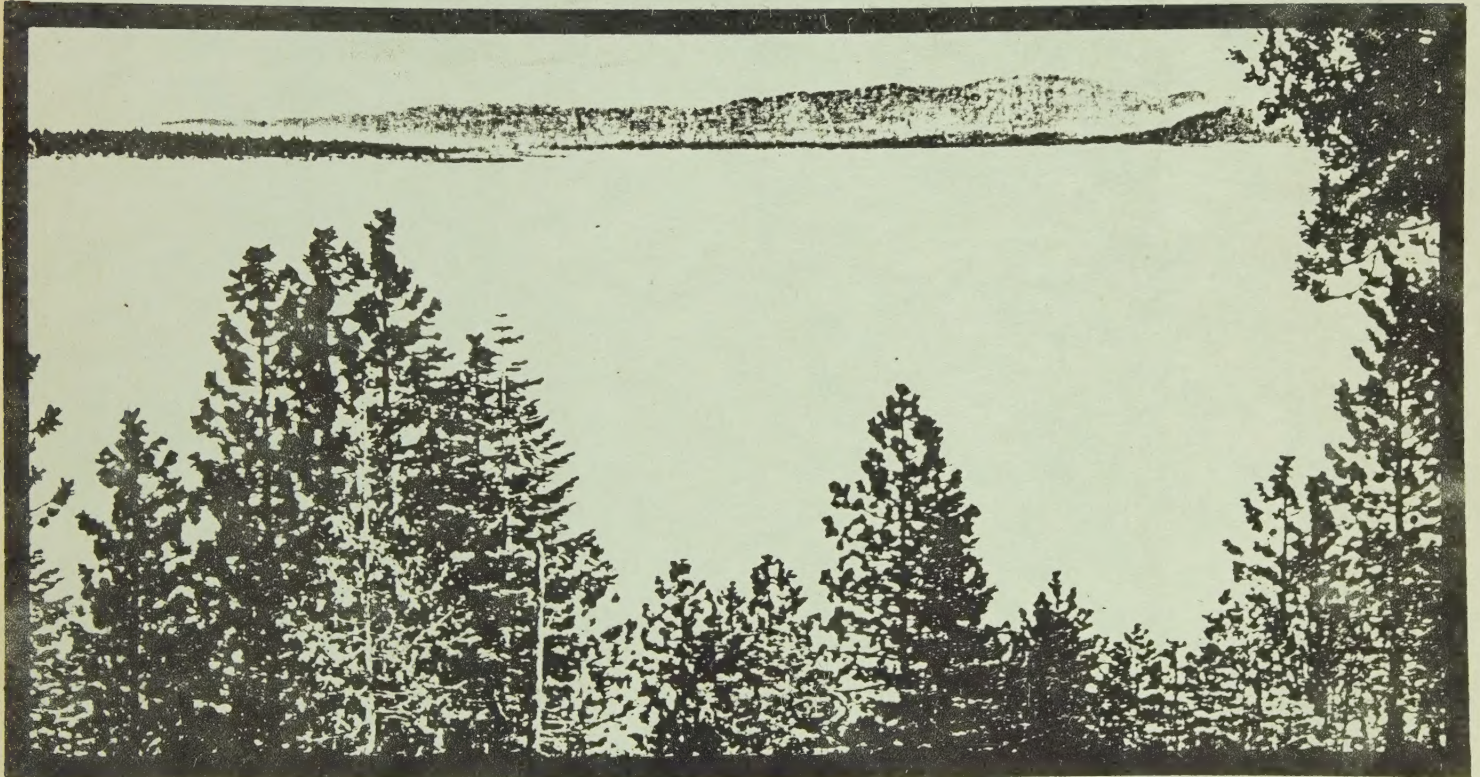
EAGLE LAKE

AREA PLAN

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LASSEN COUNTY
GENERAL PLAN

SEPTEMBER 1982

THE EAGLE LAKE AREA PLAN

a part of the
LASSEN COUNTY GENERAL PLAN
1990

Prepared by

The Lassen County Planning Department

August 1981

Adopted By

The Lassen County Board of Supervisors

on September 21, 1982

COUNTY OF LASSEN - SEPTEMBER, 1982

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RESOLUTION NO. 81-82-2

BE IT RESOLVED by the Planning Commission of the County of Lassen as follows:

WHEREAS, the Board of Supervisors directed that the Eagle Lake Area Plan as adopted in 1968 be revised and updated; and

WHEREAS, the Board of Supervisors participated as a member of the Eagle Lake Interagency Board of Directors in the preparation of the Eagle Lake Basin Planning Study which was utilized as an informational data base in the revision of this plan; and

WHEREAS, adequate notification was provided pursuant to law regarding the public hearing to revise the Eagle Lake Area Plan to affected property owners, interested persons, groups and organizations, and public agencies; and

WHEREAS, commencing on July 17, 1980, sessions of the public hearing on the revision of the Eagle Lake Area Plan to the Lassen County General Plan were held in consideration of a draft plan prepared by George S. Nolte and Associates continuing through December 18, 1980; and

WHEREAS, on January 7, 1981, the Planning Commission adopted a set of goals and objectives for the Eagle Lake Area Plan; and

WHEREAS, on January 20, 1981, the Board of Supervisors reviewed the goals and objectives of the Planning Commission and added the objective:

"Based upon the assumption that Eagle Lake has unique values to be preserved, the objective is to determine the optimum mix, levels, and locations of uses and development that would preserve and enhance the uniqueness and integrity of the lake."

WHEREAS, from January 28, 1981, through May 14, 1981, the Planning Commission held eleven further sessions of the continued public hearing in consideration of planning alternatives and analysis prepared by the Planning Department for the identified issues of the Eagle Lake Planning Area and selected a preferred alternative; and

WHEREAS, in four further sessions of the public hearing between October 21, 1981, and January 13, 1982, the Planning Commission considered the draft Eagle Lake Area Plan based on the preferred alternative as prepared by the Planning Department; and

WHEREAS, during the twenty-two sessions of the public hearing held on the revision of the Eagle Lake Area Plan, extensive oral and written input was provided by the general public, interested groups, organizations, public agencies, and property owners; and

WHEREAS, the Planning Commission has reviewed and considered all public input as well as the draft environmental impact report prepared for the Plan together with the comments and responses and finds the Draft E.I.R. to be an adequate document for certification; and

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission finds the Draft Eagle Lake Area Plan to be consistent with the Lassen County General Plan and further finds that such Draft Plan provides for order by and appropriate patterns and intensities of land use that will serve to protect and enhance the unique and extraordinary resources and character of the Planning Area and hereby recommends its adoption; and

BE IT FURTHER RESOLVED that in order for the Eagle Lake Area Plan to continue to be a valid reflection of the public interest, it must be regularly reviewed and revised as the needs and values of the public warrant change; and

BE IT FURTHER RESOLVED that the Planning Commission urges that the Board of Supervisors immediately initiate proceedings to rezone the lands of the Planning Area to implement the policies of this Plan; and

BE IT FURTHER RESOLVED that wherever the goals, objectives and policies set forth in the Draft Eagle Lake Area Plan may be in conflict with any provision of the Lassen County General Plan, such provisions of the Eagle Lake Area Plan shall be deemed amendatory to the Lassen County General Plan as special provisions thereof pertaining to the Eagle Lake Area and shall not be construed as constituting any inconsistency in such plan, internal or otherwise.

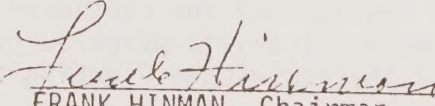
The foregoing Resolution was adopted at a regular meeting of the Planning Commission of the County of Lassen, State of California, held on the 3rd day of March, 1982, by the following vote:

AYES: Commissioners Armstrong, DePasquale, Hinman

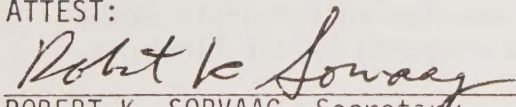
NOES: Commissioner Pearson

ABSTAIN: Commissioner Hagata

ABSENT: None


FRANK HINMAN, Chairman
Lassen County Planning Commission

ATTEST:


ROBERT K. SORVAAG, Secretary
Lassen County Planning Commission

RESOLUTION ADOPTING EAGLE LAKE AREA PLAN

Be it resolved by the Board of Supervisors of the County of Lassen as follows:

WHEREAS, the County of Lassen has heretofore, by its Resolution No. 1741 duly adopted a General Plan pursuant to the provisions of Sections 65300 and following of the California Government Code; and

WHEREAS, the Lassen County Planning Commission has, after an extended series of public hearings duly had as required by law adopted its Resolution No. 81-82-2 approving an amendment to such General Plan in the form of a draft "EAGLE LAKE AREA PLAN" which Resolution of approval is annexed to such draft EAGLE LAKE AREA PLAN; and

WHEREAS, the Lassen County Planning Commission has caused such approved draft "EAGLE LAKE AREA PLAN" to be transmitted to this Board of Supervisors; and

WHEREAS, the Board of Supervisors of the County of Lassen has duly held the hearing provided by Government Code Section 65355 after having given notice in all respects as required by law; and

WHEREAS, such hearing was continued for an additional session, and at each such session of said hearing testimony, written and oral was introduced; and

WHEREAS, such hearing was closed; and

WHEREAS, after considering the draft EAGLE LAKE AREA PLAN as submitted to it and approved by the Planning Commission, the Board of Supervisors adopted certain amendments to said draft EAGLE LAKE AREA PLAN, which have been incorporated therein as follows:

Policy V-1, Planning Area, page 43: The third paragraph is deleted. A footnote to the policy is added stating, "The Willow Creek drainage within the plan boundary shall not be subject to the policies of the Eagle Lake Area Plan, except that within a distance of one mile from the hydrologic boundary, Policy V-9 prohibiting the drilling for geothermal, gas, oil, or other hydrocarbon resources shall be implemented."

Policy V-5, Timber Management, page 44: Add sentence to policy "The preservation of timberland for the purposes of open space, wood products and watershed preservation is critically important to retaining the natural character of the Eagle Lake environment."

Policy V-7, Rare and Endangered Species, page 45: To be consistent with Federal law, the term "threatened" is added to each reference to "rare and endangered species" within this policy and implementation.

Policy V-12, Recreation, page 47: Add third sentence to second paragraph, "Private recreation is not to be precluded, provided that it is open to the general public."

Policy V-13-A, Community Land Use, Residential, Potential New Residential Subdivisions, page 48: Add to footnote, "It should be understood that if a specific project is proposed in the future which is not consistent with the policy designations and/or provisions of the Area Plan, as it may then exist, a General Plan amendment application together with the development project application would be entertained as a complete project, through such public review and determination by the County as may be provided by law. (see introduction, page 2).

Policy V-13-B, Commercial, page 51: Change the reference in the last sentence of the third paragraph from "this location" to "all locations",

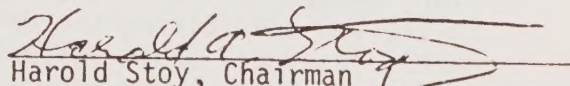
WHEREAS, all of the modifications enumerated herein above were proposals previously considered by the Planning Commission in the course of its hearings and are incorporated in said draft Eagle Lake Area Plan all in manner and form annexed.

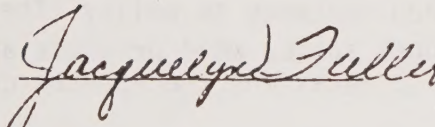
Now, therefore, the BOARD OF SUPERVISORS OF THE COUNTY OF LASSEN FINDS, DETERMINES AND RESOLVES AS FOLLOWS:

1. The draft EAGLE LAKE AREA PLAN as modified in the foregoing particulars comprises a suitable, logical, timely and fair plan for the future development of the Eagle Lake Planning Area.
2. The "EAGLE LAKE AREA PLAN" as so modified, consisting of objectives, principles, standards, and maps illustrating in graphic form such objectives, principles, and standards is hereby adopted and approved as the Area Plan for the Eagle Lake Planning Area, in accordance with Article 6 of Chapter 3 of the Planning and Zoning Law (Government Code Sections 65300 and following).

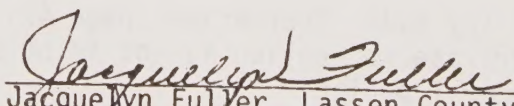
Whereas, the foregoing resolution was duly adopted at a regular meeting of the Board of Supervisors of the County of Lassen, State of California, held on the 21st day of September, 1982, by the following vote:

AYES:	Supervisors Drake, Chapman, Stoy, Babcock, Farris
NOES:	None
ABSENT:	None


Harold Stoy, Chairman
Lassen County Board of Supervisors

ATTEST: 

I, JACQUELYN FULLER, County Clerk of the County of Lassen, State of California, and ex-officio Clerk of the Board of Supervisors thereof, do hereby certify that the foregoing resolution was duly adopted by said Board of Supervisors at a regular meeting held on September 21, 1982.


Jacquelyn Fuller, Lassen County Clerk
and ex-officio Clerk to the Board of
Supervisors

EAGLE LAKE AREA PLAN

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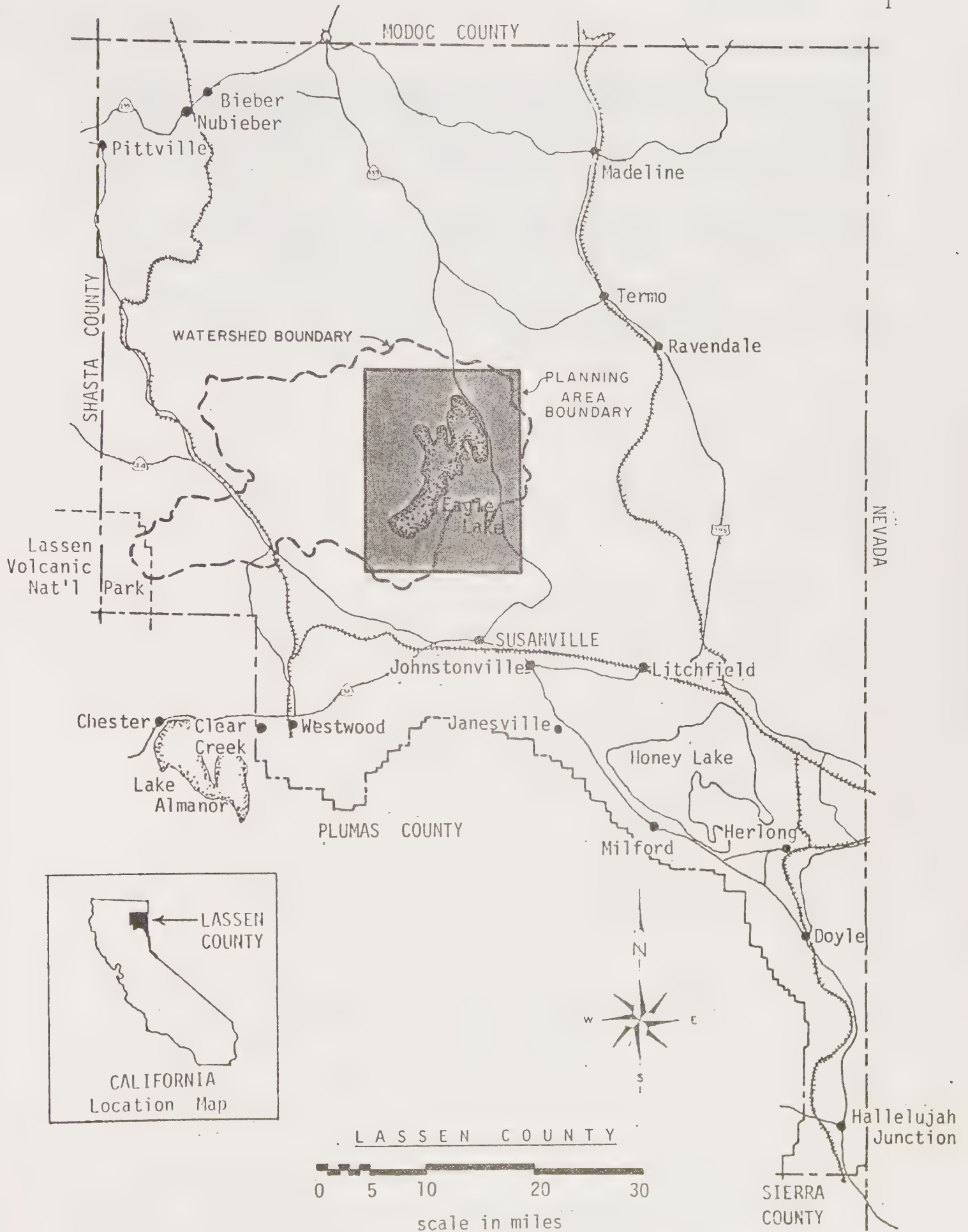
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I INTRODUCTION

GENERAL

Eagle Lake is located 14 miles north of Susanville in a mountainous basin at the juncture of the Cascades and Modoc Plateau. The lake surface covers approximately 28,000 acres depending on lake level and has no natural outlet. It is the second largest natural fresh water lake within California. The closed drainage basin within which Eagle Lake lies contains 438 square miles.

Eagle Lake is widely recognized and highly valued for its unique fishery, wildlife, aesthetics and open space. In recognition of these unique values and the increasing demand and pressure for use and enjoyment of Eagle Lake, Lassen County as well as other agencies involved in the management of the land and resources of the Eagle Lake area have directed considerable effort at developing, updating and implementing appropriate planning policies in a coordinated effort that will serve to protect and enhance those values.

DIRECTION AND AUTHORITY

Planning is an ongoing, dynamic process for making informed decisions about the future.

The implementation portion of the Eagle Lake Area Plan adopted in 1968 establishes direction for review and amendment of the Plan in the following statement:

Although adoption of the Plan is intended to express recognition that it represents the most desirable pattern for future development, conditions change and the Plan must be regularly reviewed and adapted to new developments and changing needs.

The Eagle Lake Plan, kept up to date by regular review and amendment, will provide a strong foundation for the legal and administrative procedures - i.e. Zoning, Subdivision Control, Discouraging Premature Subdivision, Health Regulations, Referral and Public Improvements and a Capital Improvement Program.

To ensure that the Eagle Lake Area Plan reflects an updated data base, adequately addresses the issues of concern and serves as a policy guide for decision makers and citizens, the Lassen County Board of Supervisors directed that a revision to the Eagle Lake Area Plan of the Lassen County General Plan be prepared.

The authority for the adoption of area plans as part of the general plan is provided by California State Law in Government Code Section 65300 et. seq. which requires that each county must prepare and maintain a comprehensive, long-term general plan. The general plan is to serve as guide to the development of communities and approval of projects which must be consistent with the general plan. To assist in the general plan process, area plans, internally consistent with the jurisdiction-wide general plan, may be adopted.

This area plan must be regularly reviewed and revised as new information becomes available and the needs and values of the public warrant change.

It is the intent of the County that this plan also apply to Federal and State lands to the maximum extent consistent with law to ensure consistency with the goals, objectives and policies of the County and the Eagle Lake Basin Interagency Board of Directors.

COUNTY PLANNING

With the growing number of visitors and residents of Eagle Lake there evolved a diversity of demands and preferences over the years for how the lake should be used, planned for and protected.

In 1962, Lassen County took its first major action in planning for the future growth and development of Eagle Lake with the adoption of Ordinance No. 293-D which established specific zoning districts around the lake. The following excerpts from a news article which appeared in the Lassen Advocate on December 19, 1962, exemplifies the County's intent in that action:

Prime purpose of the zoning study was to establish land use districts which would protect and enhance property values within the project area while at the same time assuring the orderly development of lakeside properties into real assets rather than liabilities for the County of Lassen.

In completing this extensive zoning study, the County has progressed one step further towards the ultimate goal of recreational development to a point where economic revenues and a broadened tax base become reality. Also in line with this effort, the County has continued to support the recreational value of the Lake itself.

The second major planning policy action taken by the Board of Supervisors affecting Eagle Lake was in 1968 when the Lassen County General Plan was adopted incorporating the Eagle Lake Plan as a special study area. The following excerpt from the Introduction to the Plan provides the policy basis and direction for which it was written:

The Plan indicates in general terms a desirable growth pattern for both public and private facilities in the area surrounding Eagle Lake. The basic assumption behind the Plan is that the best use for the Lake and its environs is for recreational purposes of an intensity and character in keeping with the wilderness setting and the inherent beauty of the place...

The Plan must be reviewed regularly (at least every 5 years). If the Plan or the assumptions upon which it is based remain a valid reflection of the community's values, then it should continue to be followed. If some modifications are found to be desirable, then appropriate changes should be made and adopted and the modified Plan should be followed. Eagle Lake and its environs are largely within public ownership, so this periodic review must be conducted cooperatively by all the agencies involved.

INTERAGENCY PLANNING

Within the Eagle Lake Basin, there are five agencies which have primary responsibilities for management of the resources. These agencies are the County of Lassen; the Lassen National Forest, U. S. Forest Service; the Susanville District of the Bureau of Land Management; the Resources Agency

of California, Department of Fish and Game and the California State Lands Commission. In the interest of best serving the public in the management and protection of the lake, the Eagle Lake Basin Interagency Board of Directors was formed consisting of a top official representative from each of these agencies. The intent of this Board is to develop and maintain an effective, coordinated manner of carrying out planning and management responsibilities that may effect the resources of the Eagle Lake Basin. The Interagency Board has adopted the following as its statement of objective and purpose:

Whereas the objective of the Eagle Lake Basin Interagency Board of Directors is to determine the optimum mix, levels and locations of uses and development that would preserve and enhance the uniqueness and integrity of the lake; and the purpose of the Board is to develop general policy statements and specific recommendations on major land use issues affecting the lake and basin.

The recommendation for the formation of such an interagency planning effort is contained in the Lassen County General Plan of 1968. The recognition of this need was also shared by other agencies. Although representatives of what were to become members of the Planning Board met several times in the early 1970's, it was not until 1976 that the need for such a coordinated planning effort was reaffirmed, the Interagency Board formed and meetings were held on a timely basis.

In 1978 the Eagle Lake Basin Interagency Board members shared in the cost of contracting with the firm of Raymond Vail and Associates of Sacramento for the preparation of the Eagle Lake Basin Planning Study. A portion of this project was funded with the awarding of a HUD '701' Comprehensive Planning Assistance Grant to the County. This planning study was completed in the fall of 1979 consisting of eleven volumes of environmental data and land use management recommendations as follows*:

Volume I	An Introduction to the Eagle Lake Planning Area
Volume II	Geology, Sensitivity, and Natural Hazards
Volume III	General Soil Features
Volume IV	Hydrology
Volume V	Limnological Analysis
Volume VII	Vegetation and Wildlife
Volume X	Visual Resource Analysis and Landscape Management
Volume XI	Cultural Resources
Volume XII	Socio-Economic and Resource Commitments
Volume XIV	Land Capability Analysis
Volume XV	Land Use Management Plan

In April, 1980, the Interagency Board adopted the Eagle Lake Basin Planning Study together with the public comments received as an informational data base for further planning in the Eagle Lake Basin.

The Executive Summary of the Eagle Lake Basin Planning Study contained the following summary statements as to how each agency intends to incorporate the study results into their planning process:

Lassen County

The County will utilize the recommended Eagle Lake Basin Plan as prepared by the consultant, Raymond Vail and

Associates, as an informational data base in its management and policy decisions as well as the preparation of environmental documents pursuant to the California Environmental Quality Act. Currently, the County is in the process of revising the Eagle Lake Area Plan to the General Plan under a HUD "701" Comprehensive Planning Assistance Grant awarded for FY 79-80. The preparation and adoption of this General Plan policy document by the Board of Supervisors will entail the utilization of the data and recommendations developed and documented by Raymond Vail and Associates.

Bureau of Land Management

The Bureau of Land Management, Susanville District, will use the information presented in the Eagle Lake Inter-agency Plan in the revision of the Willow Creek Planning Unit Management Framework Plan (MFP). The revision will commence in October 1980, and will be completed by November 1982. The process of revision includes the preparation of an Environmental Impact Statement (EIS) and the full public participation included in the Bureau's MFP and EIS process.

United States Forest Service

National Forest administered lands are currently divided into Management Zones. These zones and general management direction are described in District Multiple Use Plans. Prospective activities and projects are analyzed using basic direction given in the National Environmental Policy Act of 1969 and Resources Planning Act of 1976. A project's compatibility with the District Multiple Use Plans, other resource plans, and its effects upon the area's environment are analyzed and documented.

The data and recommendations developed and documented by Raymond Vail and Associates will be considered in project analysis and in development of the Forest Land and Resources Management Plan. This Plan is scheduled for completion in 1983 and will replace the District Multiple Use Plans.

California Department of Fish and Game

The Department is going to use the Recommended Eagle Lake Basin Plan as a guideline for comments and recommendations on private, county, State and Federal land management program proposals within the Eagle Lake Basin. In addition, we will use the Plan as a basis for our fish and wildlife management activities in the Basin so that our programs will compliment the plan.

State Lands Commission

The staff of the State Lands Commission will use the Eagle Lake Basin Study as a resource document to:

- Develop land management and policy alternatives which may be adopted by the State Lands Commission to govern the use of state lands located within the Basin; and
- Respond to land use proposals sponsored or considered by other government entities within the Eagle Lake Basin; and
- Develop or comment upon required environmental analyses associated with land use decisions.

Five additional volumes were recommended by the consultant to be prepared and were not included under this contract. Those volumes include: Vol. V, Shoreline Mechanics; Vol. VIII, Grazing and Timber Management; Vol. IX, Air Quality and Noise; Vol. XIII, Energy and Water Conservation; Vol. XVI, Implementation Strategies.

Following are brief summary statements of the roles and responsibilities of the Federal and State member agencies of the Eagle Lake Basin Interagency Board:

United States Forest Service

The Lassen National Forest under the United States Department of Agriculture, Forest Service is responsible for the management of approximately 40,000 acres in the Eagle Lake Planning Area. The Lassen National Forest operates under such federal law as the Organic Act of 1897, the Multiple Use Sustained Yield Act of 1960, and the Forest and Range Land Renewable Resources Planning Act of 1974 and manages land reserved from the public domain for outdoor recreation, wood fiber, water, forage and other natural resources.

Bureau of Land Management

The Susanville District of the Bureau of Land Management, United States Department of the Interior is responsible for the management of public lands in the planning area and their various resources under the Federal Land Policy and Management Act of 1976. The Bureau of Land Management is responsible for the management of approximately 30,000 acres in the Eagle Lake Planning Area.

State Lands Commission

The State Lands Commission is responsible for administering the beds of all navigable waterways. Management of the lands must be consistent with the public trust for water oriented public purposes.

Department of Fish and Game

The Department of Fish and Game is charged with the responsibility to protect, maintain, and enhance the fish and wildlife resources of the state.

In the Eagle Lake Basin the Department fulfills this obligation by managing the unique Eagle Lake fishery; the big game populations, both deer and antelope; the rare and endangered species, bald eagles, wolverines, and Sierra Red fox, plus the plant program. The Department collects biological

data each year to assist in the development of appropriate hunting and fishing seasons and bag limits. They are also directly involved with reviewing and providing input to land use activities of both public and private lands. The Department actively patrols the planning area to enforce the fish and game laws to protect these resources.

The Eagle Lake Basin Interagency Board of Directors adopted the Goals and Objectives contained in this area plan on August 2, 1982.

II ISSUES

II ISSUES

The identification and understanding of issues allows decision makers to set broad policy in the form of goals and objectives which are used for the development, testing and selection of planning alternatives and ultimately as the basis and direction for the adoption and implementation of the plan.

The following issues have been identified by the public, the County and other agencies involved in the management of Eagle Lake. They have served as a determining factor in the course followed in this planning process.

1. Planning Area
Should the existing Planning Area boundary as established in 1968 be retained?
2. Lake Level
Should the lake be allowed to fluctuate naturally?
3. Wildlife/Fishery
How should the resource be managed?
4. Noise
Are existing noise regulations adequate?
5. Transportation
 - A. Airports
Should the airstrips be closed, maintained at their present level of use and classification, or improved?
 - B. Marinas/Launchramps
Should existing facilities be further improved and expanded and additional facilities be constructed at new locations?
 - C. Houseboats
Should houseboats be allowed?
 - D. Roads
County: Should road system be maintained as existing or be improved?
State: Should State Highway 139 be relocated? Above historic highwater mark? On bluffs above north end of Eagle Lake?
 - E. Trails
Should a system of foot and equestrian trails be constructed?
6. Wastewater Treatment/Water Quality
Should there be a program to determine the status and trends of water quality and appropriate measures developed for its protection?
7. Water Supply
Should the use of private wells for domestic use continue, or should community water systems be required for all or portions of existing and new development?
8. Growth/Development
Should there be no further development of private and public lands? Should development of private lands be limited to existing approved subdivision lots commensurate with zoning and other regulations? Should further development of private lands be allowed in addition to existing approved subdivisions? Should

further development of public lands be allowed in addition to existing campgrounds and other facilities? Should the number of people in the basin be limited at any given time?

9. Public Services/Community Services Districts
Should community services districts be formed or other appropriate entities such as homeowners associations?
10. Livestock Grazing
Are livestock grazing practices having an adverse effect on lake water quality, shorezone recreation and wildlife habitat?
11. Timber Harvesting
Are existing timber harvest practices and regulations in the basin adequate and appropriate for continuance?

III GOALS AND OBJECTIVES

III GOALS AND OBJECTIVES

OVERALL GOAL

The overall goal of the Eagle Lake Area Plan is the long-term protection and enhancement of the environment of Eagle Lake for all generations. Based upon the assumption that Eagle Lake has unique values to be preserved, the objective is to determine the optimum mix, levels, and locations of uses and development that would preserve and enhance the uniqueness and integrity of the lake.

NATURAL RESOURCE/ENVIRONMENT

- Preserve and enhance the unique and extraordinary resources of Eagle Lake.
- Maintain and enhance the water quality of Eagle Lake and its watershed and protect it from pollution.
- Maintain and protect the ecological and limnological systems of the lake from degradation.
- Protect and enhance the wildlife, fishery and avian resources dependent on Eagle Lake.
- Maintain the natural conditions and stability of the soils.
- Protect and enhance the native vegetation and forested areas and maintain their watershed and timber production values.
- Preserve significant rock outcrops and geologic features.
- Preserve and enhance scenic resources and natural landscape features and open space vistas.

LAND USE/GROWTH/DEVELOPMENT

- Ensure that the location and quality of growth and development and intensity of use by man at Eagle Lake be such that the quality of the sought after values of the resources and environment are not impaired but protected and enhanced to retain their uniqueness and enjoyment now and in the future.
- That physical development be consistent with the environment and ecology of the basin protective of its wildlife, fishery and avian ecosystems.
- That physical development and its visual character be in consonance with the natural features and constraints of the environment and the community in which it is located.
- That physical development be balanced with the services and facilities available to support it.
- That the rate of growth and development be commensurate with and not exceed the ability of the service system and environment to assimilate it.

SOCIAL/CULTURAL

- Provide equity and balance in opportunity and access to public resources, recreational facilities, and housing for permanent and seasonal residents and seasonal tourists and recreationists of all socio-economic groups at a level and intensity commensurate with the maintenance of environmental quality.
- Promote and protect the health, safety and welfare of all residents and visitors.
- Maintain and protect historic and archaeological resources.

IV THE ENVIRONMENTAL SETTING OF THE EAGLE LAKE PLANNING AREA/
INFORMATIONAL BASE



EAGLE LAKE PLANNING AREA

SCALE IN MILES
0 1 2 3 4

IV THE ENVIRONMENTAL SETTING OF THE EAGLE LAKE PLANNING AREA/ INFORMATIONAL BASE

IV-1 THE PLANNING AREA

The boundaries of the Eagle Lake Planning Area were established with the adoption of the Lassen County General Plan in 1968. The Planning Area contains 45% of the entire 438 square mile Eagle Lake Basin. Of the 242 square miles contained within the boundaries of the Planning Area, about 18% lies outside of the Eagle Lake watershed, primarily in the upper Willow Creek drainage.

Within the Eagle Lake Planning Area, the land holdings by jurisdiction / ownership are approximately as follows:

<u>Jurisdiction/Ownership</u>	<u>Acres</u>
United States Forest Service	40,280
Bureau of Land Management	29,140
Private	57,375
TOTAL LAND	126,795
State Lands Commission (submerged lands- bed of Eagle Lake	28,000
TOTAL AREA	154,795

Approximately 80% of the shoreline of Eagle Lake is under the jurisdiction of the U. S. Forest Service or the Bureau of Land Management.

The majority of the 238 square miles of the Eagle Lake watershed lying outside of the Planning Area is under the jurisdiction of Lassen National Forest or is private, commercial timberland under Timber Preserve Zoning. Private lands, not under TPZ, account for about 1,800 acres of the watershed lying outside of the Planning Area.

IV-2 NATURAL RESOURCES

IV-2-A Eagle Lake and Its Watershed

-Lake Level-

At an elevation of 5,102 feet (April, 1981), Eagle Lake occupies a surface area of about 25,000 acres within a closed drainage basin of 438 square miles. The only surface outflow from the lake, other than from evaporation and ground seepage, occurs from a small amount of leakage through the Bly Tunnel. The Bly Tunnel was completed in 1923 to provide the Honey Lake Valley with a source of irrigation water, however, the tunnel was blocked and abandoned 12 years later. As a result of the Bly project and a series of drought years, Eagle Lake reached its recorded historic low level of 5,091 feet in 1937 which reduced its surface area to 14,500 acres. The maximum recorded lake elevation occurred in 1916 at 5,125 feet during which time the surface area covered 29,500 acres.

Variations in the surface elevation of Eagle Lake can have significant effects on its natural and man-made features. At elevations below 5,100 feet adverse effects occur to littoral (shorezone) vegetation, the fishery, wildlife, and water quality. Existing boat launching facilities can also be rendered inoperative, and the aesthetics of the shoreline are degraded as extensive mudflats emerge in the shallower areas as the lake recedes.

At higher lake elevations, the features which deteriorate at lower elevations benefit. However, shoreline improvements such as portions of State Highway 139, the Spaulding Airstrip, some developed homesites and portions of public campgrounds become subject to inundation.

Alternative plans¹ have been considered, including one to control the lake's maximum elevation to as low as 5,106 feet to insure protection of shoreline developments. This would have included the installation of a control valve in the Bly Tunnel. Excess water would be released through the tunnel into the Willow Creek drainage as the lake sought higher levels. However, this plan would not prevent the lake from falling to critically low elevations during drought periods.

If such an alternative was implemented in 1975 when the lake level was at 5,109.5 feet, because of the recent dry years, the April, 1981 level would have been significantly lower than the 5,102 level recorded. Effects on the Willow Creek Valley from such discharge of excess waters could result in the inundation of agricultural lands and the degradation of soils and their productivity potential.

Shoreline areas of Eagle Lake that are subject to inundation at higher lake levels are designated on Flood Hazard Boundary Maps prepared by the U. S. Department of Housing and Urban Development. These maps are on file in the Lassen County Planning Department.

-The Watershed-

All streams entering Eagle Lake are intermittent, generally flowing from March into June; or ephemeral, flowing for only a short time in response to periods of heavy runoff. The three most important streams in terms of annual surface inflow are Pine, Papoose and Merrill Creeks.

Of the 27 watersheds tributary to Eagle Lake, the area of the Pine Creek watershed encompasses 56% of the entire Eagle Lake watershed and provides approximately 75% of the total surface inflow. The Pine Creek watershed also contains the greatest groundwater recharge potential due to heavier snow accumulation and large areas of gently sloping terrain. Groundwater inflow is reported to account for a substantial amount of total inflow to Eagle Lake.

-Water Quality-

Eagle Lake is a sodium bicarbonate lake with high total alkalinity and moderately high pH and hardness. The chemical parameters of the water serve to strongly buffer it against changes in pH.

The lake consists of three basins connected by narrow channels all having somewhat different chemical, physical and biological characteristics. The north and middle basins are relatively shallow (average depth 10-15 feet), allowing the water to be continually mixed and oxygenated by wind action. The south basin being deeper (average 50-60 feet up to 90 feet maximum) stratifies in the summer and fall and is highest in production of algae and plankton.

1. Alternative considered in report, "Alternative Plans for Controlling Lake Levels-Eagle Lake, Lassen County", Department of Water Resources, November, 1972. County policy of General Plan, Open Space Element, adopted June, 1972, states, "allow the water of Eagle Lake to fluctuate naturally".

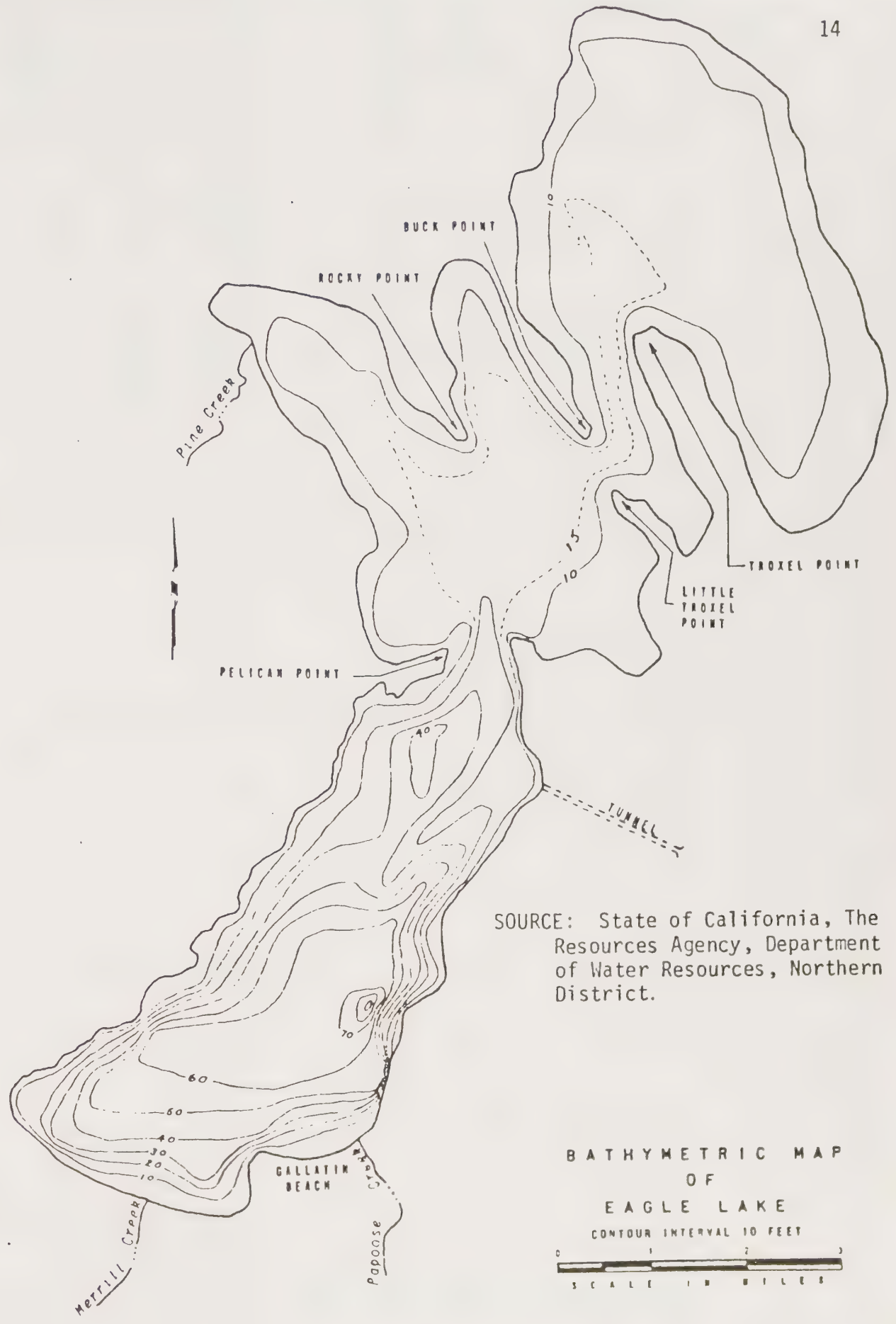
Except for the small amount of export by the Bly Tunnel or export by terrestrial components of the ecosystem (i.e., biomass removed by fish eating birds and migratory waterfowl), all nutrients, salts and pollutants that enter Eagle Lake remain in the lake forever.¹ Nutrient concentrations (materials which stimulate green plant growth) are considered to be low to moderate, the greatest portion of which is tied up in organic forms as indicated by high plankton (microscopic organisms) growth. As dissolved nutrients become available algae utilize them to produce protoplasm, and in this way available nutrients usually remain fairly low.² Studies³ at the Eagle Lake Field Station have determined that the growth of algae in Eagle Lake is a function of nutrient availability, and that the greatest potential source of nutrients is from septic tank drainage.

Since Eagle Lake is dependent upon surface and groundwater inflow, the majority of which is provided by the Pine Creek watershed, the degradation and contamination of such surface and groundwaters would likely produce deleterious effects on Eagle Lake (Behnke, others).

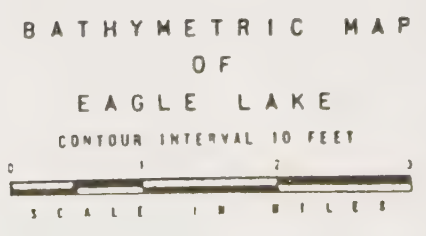
Nutrient enrichment in Eagle Lake by any means would accelerate the eutrophication process which now appears to be quite slow.⁴ Factors which make Eagle Lake potentially sensitive to eutrophic changes include its location in a closed basin with essentially no flushing; a fluctuating surface elevation which influences nutrient concentrations according to the water volume of the lake; geological characteristics of the area which is mostly underlain by fractured basalt bedrock and beach gravels which are extremely permeable but lack nutrient removing ability; and an anoxic hypolimnion (oxygen deplete cold lower layer of the lake during stratification) in the south basin which could agitate and release nutrients held in the bottom sediments. If the inflow of nutrients exceeds the combined outflow of nutrients and storage as sediments, the water will eventually become eutrophic.⁵

The limited extent of water quality testing performed thus far on Eagle Lake has not indicated dramatic changes in water quality from contamination with wastes to become a health hazard or enrichment with nutrients to where algal growth has become excessive. However, little is known at this time about the lake's capacity to assimilate and store additional nutrients. With the increased recreational and residential use of the Eagle Lake area, water quality conditions may be changing.⁶

1. California Regional Water Quality Control Board, Lahontan Region, Report on the Water Quality Status of Eagle Lake, Staff Report, May, 1981, pg. 28
2. Eagle Lake Basin Planning Study, Vol. 5, Eagle Lake Limnological Analysis, pg. 8
3. Maslin, Paul, A Preliminary Analysis of Eagle Lake Water Quality, Department of Biological Sciences, California State University, Chico, 1972, pg. 21
4. Eagle Lake Basin Planning Study, Vol 5, pg. 40
5. IBID, pg. 28
6. IBID, pg. 9

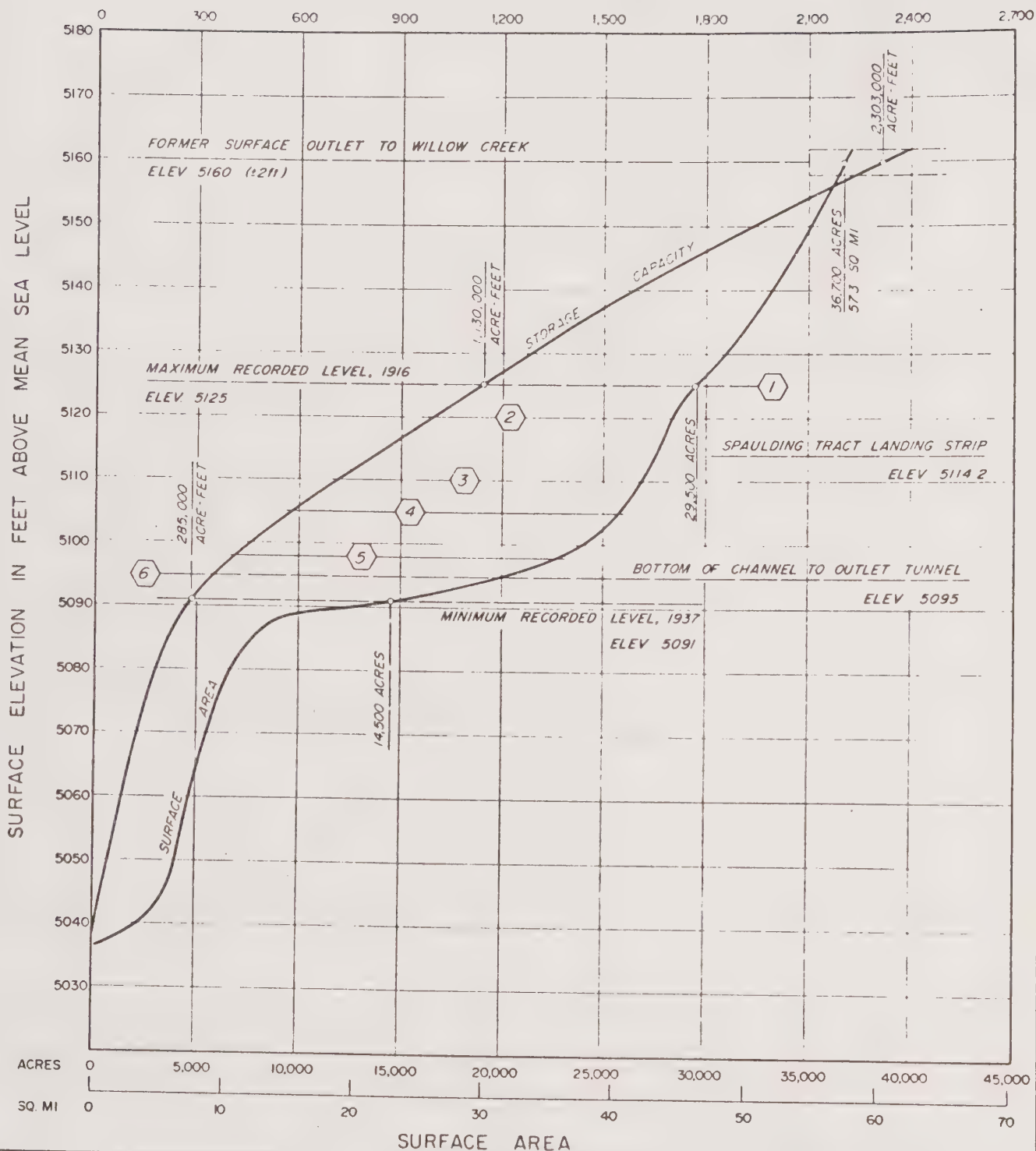


SOURCE: State of California, The Resources Agency, Department of Water Resources, Northern District.



Bathymetric Map of Eagle Lake

STORAGE CAPACITY IN 1,000 ACRE-FEET

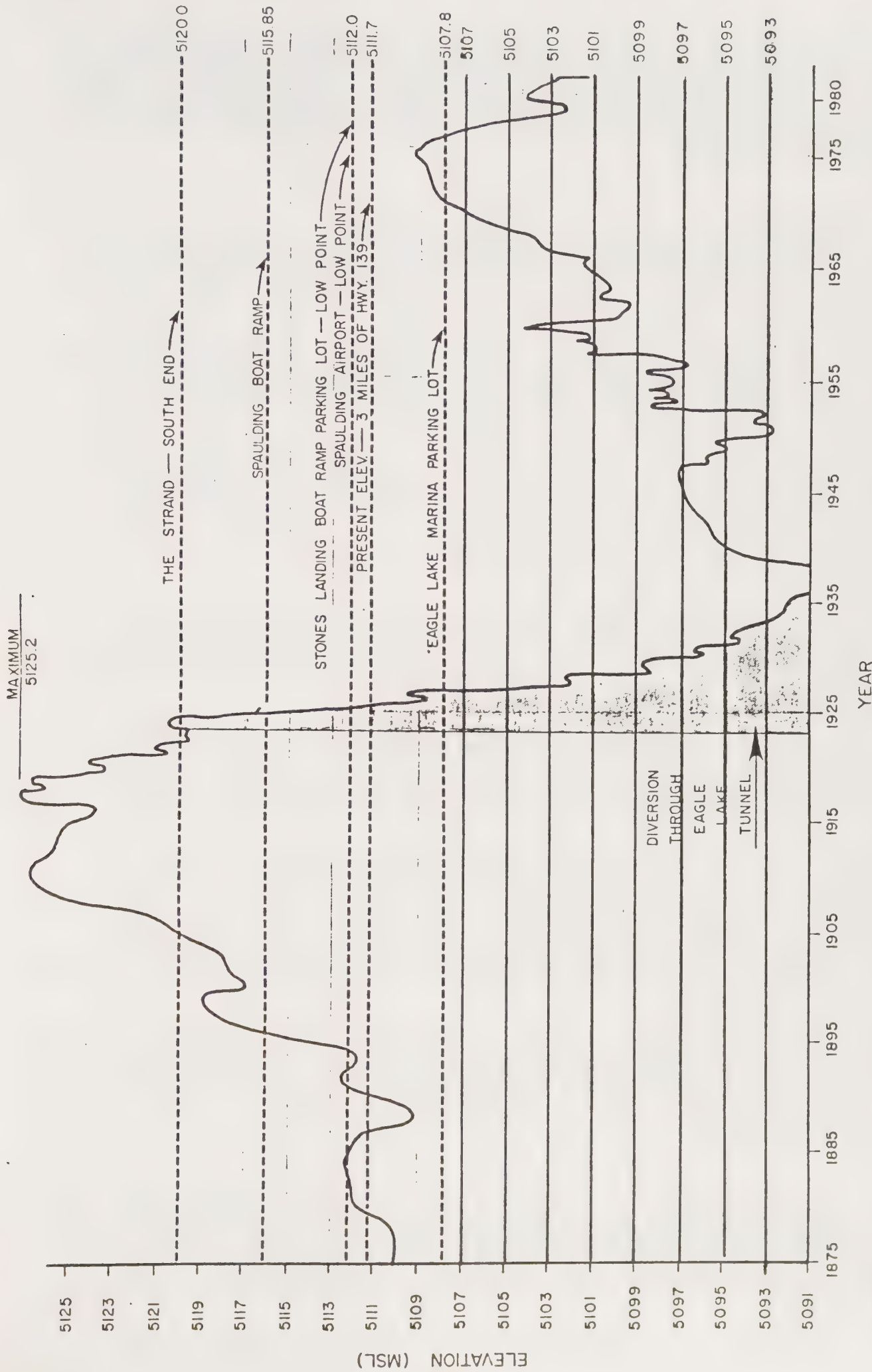


LAKE LEVEL

PROBABLE EFFECTS

- | | | |
|---|------|--|
| ① | 5125 | 12 CABINS FLOODED TOTAL. (DWR, 1972) |
| ② | 5120 | 6 CABINS FLOODED TOTAL AND EAGLE SECTION OF HWY. 139 INUNDATED BETWEEN 5110 AND 5120. 2/3 OF U.S.F.S. CAMPGROUNDS FLOODED. AIRSTRIP FLOODED. (DWR, 1972) |
| ③ | 5110 | OPTIMUM HIGH WATER (DWR) - 1/3 OF U.S.F.S. CAMPGROUNDS FLOODED. (DWR, 1972) |
| ④ | 5105 | HWY. 139, U.S.F.S. CAMPGROUNDS, CABINS, AND AIRSTRIP PROTECTED. TROUT HABITAT DECLINES AT NORTH END - WATER BECOMES TOO WARM AND SALTS TOO CONCENTRATED. * |
| ⑤ | 5098 | WILDLIFE DETERIORATES BELOW THIS LEVEL. * |
| ⑥ | 5095 | TROUT CANNOT MIGRATE TO PINE CREEK * |

* REFER TO LIMNOLOGICAL ANALYSIS OF EAGLE LAKE - VOLUME V OF THE EAGLE LAKE BASIN PLAN.
SOURCE: ELBPS VOL. 4, Pg. 19 (RVA)



SOURCES

- DEPT. of WATER RESOURCES
- LASSEN CO PUBLIC WORKS

EAGLE LAKE WATER SURFACE ELEVATION

PREPARED BY:
LASSEN COUNTY PLANNING DEPT.

Until the Lahontan Regional Water Quality Control Board has completed an adequate level of water quality monitoring, conclusive evidence as to the status and trends of the lake's water quality and the implementation of appropriate measures for its protection cannot be made. A comprehensive program of this nature is essential for planning and management purposes to ensure the longevity of Eagle Lake.

IV-2-B Climate

The climate of the Eagle Lake Basin and Planning Area ranges from sub-humid in the southern and western portions to semi-arid in the east and northeast. Most of the precipitation results from storm fronts which move across the Basin from the west or northwest. The major portion of annual precipitation falls as snow from November into April while summers are generally warm and dry with the exception of occasional thunder showers. Precipitation over the Basin varies widely from over 50 inches near Lassen Park and the headwaters of Pine Creek in the west to less than 14 inches in the easternmost portion. On the lake surface the average annual precipitation varies from about 26 to 14 inches from southwest to northeast. The rain shadow influence of the higher Cascade range to the west, which collects much of the moisture from Pacific storms is reflected by the dramatic change in vegetational types from the vast conifer forests in the western portion to the sagebrush-juniper dominated terrain of the eastern side of the Basin.

IV-2-C Air Quality

Air quality in the Eagle Lake Basin area is considered to be generally excellent although measurements of ambient air quality have not been conducted. The area is designated unclassified by the State of California Air Resources Board because data is not available to confirm attainment or non-attainment of national ambient air quality standards.

The major source of air quality impairment originates from the Sacramento Valley when atmospheric conditions cause "spill-over" of air pollutants from the valley to enter the Eagle Lake area. Smoke from forest fires is also occasionally transmitted by winds into the area causing reduced visibility.

Sources of air pollution in the Eagle Lake Planning Area are relatively limited because of the extent and type of use and development in the area. Air quality impairment at Eagle Lake will increase somewhat as sources of emissions such as motor vehicles, power boats, campfires, and residential space-heating with wood stoves increase with additional use and development. Localized air quality impairment can also result from construction and timber harvesting operations in the area.

The frequency of occurrence of prevailing winds from the southwest to northeast and air circulation patterns induced by the topography provide the area with a generally high atmospheric diffusion factor and this reduces the air pollution potential that could be expected from existing and future sources of emissions.

IV-2-D Vegetation

Within the Eagle Lake Basin and Planning Area there is a contrasting diversity of vegetation types that reflect the rainshadow influenced climate and variations in elevation and topography. Vegetation in the north and east portions is characteristic of the arid Modoc Plateau consisting predominantly of sagebrush, scattered juniper and isolated pine woodlands.

The south and west portions are characteristic of the Cascades and Sierra Nevada ranges with extensive pine and fir forest lands. Because of the unique characteristics of the Eagle Lake Basin, more than 280 plant species have been identified several of which have been included in the California Native Plant Society's list of rare and endangered plants.

-Vegetation Communities-

The following is a brief description of the various vegetation communities found in the Planning Area and the dominant species found in each.¹

FOREST-TYPE COMMUNITIES

Fir Forest

The fir forest occurs at higher elevations in numerous areas of limited extent in the west and south portions of the Planning Area. The dominant canopy species are white fir and to a lesser extent, red fir.

Mixed Coniferous Forest

This community is common within the Basin usually occurring where the fir forest and yellow pine communities meet. Having a relatively high species diversity, the dominant canopy species include white fir, ponderosa (yellow) pine and Jeffrey pine.

Yellow Pine Forest

A common vegetational community, particularly in the southern half of the Basin, its canopy is dominated by ponderosa (yellow) pine and to a lesser extent by Jeffrey pine.

Northern Juniper Woodland

The northern juniper woodlands are located predominantly in the north and east portions of the Planning Area. Juniper tend to increase their habitat in response to increased fire suppression and excessive livestock grazing. Major shrubs include big sagebrush and bitterbrush.

BRUSH AND GRASSLAND-TYPE COMMUNITIES

Sagebrush Scrub

Except for an occasional juniper, this brush type community is dominated by shrubs such as big sagebrush, bitterbrush and rabbit brush. It is most common in the north and east portions of the Planning Area.

Lava Flats

This community is sparsely vegetated occurring most extensively on the Brockman Flat lava beds on the west side of Eagle Lake. Except for widely scattered ponderosa and Jeffrey pine, shrubs such as curlleaf mountain mahogany and bitterbrush are the dominant plant form.

Brush Fields

In most cases these vegetation communities were mixed conifer or yellow pine forests prior to fire alteration and are now dominated by shrub species such as greenleaf manzanita, curlleaf mountain mahogany and squaw carpet.

1. Eagle Lake Basin Planning Study, Vol. 7, Vegetation and Wildlife, pgs. 9-27

Dry Meadow Grassland

The limited distribution of this community is primarily in flat areas throughout the Basin and Planning Area. Herbaceous "meadow-like" species such as sedges and bluegrasses dominate.

WETLAND-TYPE COMMUNITIES

Riparian Woodland

This community is very important to wildlife and occurs only in association with streams and small lakes and to a limited extent. Principal trees are quaking aspen, cottonwood, willow and mountain alder with herbaceous plants typical of the wet meadow.

Wet Meadow

Very important to wildlife, wet meadows occur in association with streams, springs, and other sources of surface water. Soils are generally saturated through the summer. Dominant plant species include various sedges and rushes. Trees that occur at the periphery of the meadows include willow, quaking aspen and black cottonwood.

Freshwater Marsh

The freshwater marsh community is a very limited and critical habitat for shoreline nesting and feeding birds. Plant species include common tule, water smartweed and sago pondweed.

Open Water

This is the aquatic community of the open water of Eagle Lake.

-Rare and Endangered Species-

Within the Eagle Lake Basin and Planning Area, eight native plant species have been identified to be species listed by the California Native Plant Society as rare or endangered.¹ Five of these species have been specifically identified within the Planning Area. These are Small-leaved agastache (*Agastache parvifolia*), Buckbean (*Menyanthes trifoliata*), Miltitzia (*Phacelia inundata*), Fremont's smelowskia (*Polycstenium fremontii*), and Whitneya (*Witneya dealbata*). Three other such rare and endangered species have been identified in the Basin and probably also occur within the Planning Area. These are Pigmy monkey flower (*Mimulus pygmaeus*), Ash penstemon (*Penstemon cinicola*), and Lassen County bluegrass (*Poa fibrata*). The Eagle Lake area is unique in that it supports an unusual diversity of vegetation types including these "rare and endangered" species.

Although species which are recognized by the California Native Plant Society as "rare" or "endangered" may have the approval and support of the academic sector, they do not presently have mandated state or federal protection. None of the eight previously mentioned species are included in the California Department of Fish and Game list of "Endangered and Rare Plants of California" (as published October 6, 1978) or the United States Fish and Wildlife Service list of "Endangered and Threatened Wildlife and Plants" (as published December 11, 1978).²

1. Eagle Lake Basin Planning Study, Vol. 7, pgs. 27-34

2. IBID, pg. 34



VEGETATION COMMUNITIES

LEGEND

FOREST	DESERT & GRASSLAND	WETLANDS	MISCELLANEOUS
F FIR FOREST	SS SAGEBUSH SCRUB	P POTAPSON BOOGLAND	L LAVA
MCF MIXED CONIFEROUS FOREST	LF LAVA FLATS	F FRESHWATER WATERS	PL PLANTATIONS
YWF YELLOW PINE FOREST	BF BRUSH FIELDS	O OPEN WATER	
NWJ NORTHWEST JANTER BOOGLAND	DM-G DIP-HEADOP GRASSLAND	H HE-HEADOP	
 REPORTED OBSERVATIONS OF RARE AND/OR ENDANGERED PLANTS IN PLANNING AREA	AGPA-3 SMALL LEAVED AGASTACHE BUSH BEAN	PHIN-1 MOUNTAIN FIR WATERSHED	W WATERSHED

-Timber Production Areas-

A large extent of the Eagle Lake Basin and Planning Area is coniferous forest, critically important for wildlife habitat and watershed maintenance as well as the production of commercial timber. The dominant vegetative cover of nearly half of the land area within the Planning Area is coniferous forest.

The prime commercial timberlands of the Planning Area are located mostly in the west and south portions and are almost exclusively under the management or ownership of the U. S. Forest Service or private timber companies.

The majority of the suitable private commercial timberlands are under Timber Preserve Zoning which accounts for about 30% of the land area encompassed by the Plan.

IV-2-E Wildlife

-Species-

There are approximately 220 different species of mammals, birds, reptiles and amphibians found within the Eagle Lake Basin at some time during the year. Some of the wildlife species that are relatively abundant in the Basin are rare, uncommon or even non-existent elsewhere. More unique examples of the wildlife inhabiting the Eagle Lake Basin include the Bald Eagle; possibly the largest nesting colonies of the western grebe and eared grebe in the United States; one of the largest known breeding colonies of osprey (a fish-hawk) in the United States; extensive numbers of a variety of waterfowl; pronghorn antelope; Sierra Nevada black bear; mountain lion; and uncommon furbearers including the marten, the fisher, and the "rare" wolverine.

-Habitats-

It is because of the extent and high quality of the habitats in the Eagle Lake area that such a diversity and abundance of wildlife occur. In a joint effort by the California Department of Fish and Game, the United States Forest Service and the Bureau of Land Management, a habitat classification system was devised for the Eagle Lake Basin Interagency Planning Study which designates crucial, high, moderate and low-quality habitats in the Eagle Lake Planning Area as follows:

Crucial Habitat

Of the "crucial habitat" type, which is considered critically important to the continuance of rare, endangered, or unique wildlife in the Eagle Lake Basin, areas were found to include:

- Bald Eagle nesting territories and winter roosts
- Osprey nesting territories
- Grebe nesting areas
- Pelican nesting areas

High-Importance Habitat

These areas are essential to the maintenance of healthy reasonably abundant populations of particularly desirable wildlife species in the Eagle Lake area.

- Wet meadows
- Fawning areas
- Bald Eagle foraging areas
- Osprey foraging areas



WILDLIFE HABITAT QUALITY

LEGEND

LEVEL OF IMPORTANCE

	CRUCIAL	AREAS OF CRUCIAL IMPORTANCE TO WILDLIFE, BASED ON THE ABILITY OF WILDLIFE TO SURVIVE AND REPRODUCE IN THESE AREAS. THESE AREAS ARE OF THE HIGHEST IMPORTANCE TO WILDLIFE.
	HIGH	AREAS OF HIGH IMPORTANCE TO WILDLIFE, BASED ON THE ABILITY OF WILDLIFE TO SURVIVE AND REPRODUCE IN THESE AREAS. THESE AREAS ARE OF HIGH IMPORTANCE TO WILDLIFE.
	MODERATE	AREAS OF MODERATE IMPORTANCE TO WILDLIFE, BASED ON THE ABILITY OF WILDLIFE TO SURVIVE AND REPRODUCE IN THESE AREAS. THESE AREAS ARE OF MODERATE IMPORTANCE TO WILDLIFE.
	LOW	AREAS OF LOW IMPORTANCE TO WILDLIFE, BASED ON THE ABILITY OF WILDLIFE TO SURVIVE AND REPRODUCE IN THESE AREAS. THESE AREAS ARE OF LOW IMPORTANCE TO WILDLIFE.
	PRESENT LAND USE CONFLICTING WITH WILDLIFE	

Waterfowl feeding and resting areas
 Riparian woodlands
 Furbearer habitat, i.e., higher elevation dense fire forests
 Prime summer or winter range for deer and/or antelope
 including migration corridors
 Belted Kingfisher nesting areas
 Heron rookeries

Moderate-Importance Habitat

These areas are important to the maintenance of high species diversity and population levels within the Basin and are utilized by most resident wildlife at one time or another:

General deer summer or winter range
 Upland game species habitat
 Habitat supporting non-game species of birds and mammals
 Reptile and amphibian habitat
 Waterfowl resting areas

Low-Importance Habitat

These areas are utilized primarily by species which readily adapt to human occupancy and will co-exist in proximity to humans. These species are typically limited to songbirds, lizards, squirrels, and other rodents. Most other wildlife will avoid these areas unless crowding or food availability force them to do otherwise. These areas include developed areas such as subdivisions, lodges and campgrounds.

-Rare and Endangered Species-

The rare and endangered species of wildlife known to exist within the Eagle Lake Basin and Planning Area are the Wolverine, Sierra Red fox, and the Bald Eagle.

Rare sightings of wolverine and Sierra Red fox have been documented in the Eagle Lake area. Both of these mammals have been classified by the California Fish and Game Commission as "rare species".

The Bald Eagle is classified on the state and federal lists as an "endangered species". Fluctuating numbers of Bald Eagles utilize the Eagle Lake area for foraging and nesting and are considered a common spring visitor. During a winter survey in 1978, the U. S. Forest Service reported 13 adults and 6 immature Bald Eagles observed near the lake.¹

IV-2-F The Fishery

The Eagle Lake fishery contains six species of which the most renowned is the unique Eagle Lake Trout. This trout has made Eagle Lake famous among anglers as its average size range of 2-5 pounds would be a prized trophy in most other waters. However, their population in the early 1950's became precariously low and near extinction due to low water levels in Eagle Lake and inadequate flows from tributary streams emanating from a watershed altered by historical logging and grazing activities that rendered their natural spawning areas unsuitable and inaccessible. Through the efforts of the California Department of Fish and Game, a station was established near the mouth of Pine Creek whereby eggs are taken during the spring spawning run and the trout are reared in hatcheries to later be released in Eagle Lake. The success of this program became evident in the early 1960's

1. McCollum, Michael T., Bald Eagle Winter Survey, unpublished progress report, U.S. Forest Service, Susanville, Ca., January 27, 1978

when the population and quality of the Eagle Lake Trout fishery reached levels that caused widespread attraction and recognition from anglers.

The rapid growth of the Eagle Lake Trout is due largely to its diet of the abundant tui chub which provides excellent forage not only for the trout, but for an abundance and diversity of piscivorous (fish-eating) birds that are found in the area. Because of its value as a forage fish it may be the most important fish to the lake and basin ecosystem.

The other species of fish native to Eagle Lake which provide some importance as forage for fish and wildlife are the Tahoe Sucker and Lahontan Redside. The Lahontan Speckled Dace is the least numerous of Eagle Lake fish being unprolific and nonschooling and as such is not considered an important forage in Eagle Lake.

Between 1879 and 1956 twelve different warmwater and salmonoid fish species were introduced, only two of which became established. The Brown Bullhead is the only introduced (possibly illegally) fish species still living in Eagle Lake. The only other fish to become established was the largemouth bass which has not reappeared since the lake receded to the low levels of the 1930's.

IV-2-G Geology

-General-

Eagle Lake lies within the Modoc Plateau geomorphic province which merges a short distance to the west with the Southern Cascades and to the south and east with the Basin and Range geomorphic provinces. Mahogany and Gallatin Peaks, which rise on the southeast side of the lake, are considered a northern segment of the Sierra Nevada province which terminates west of Susanville.

The present day lake area portion of the basin is a down-dropped block between north-south trending faults along the eastern side of the lake (i.e., ridges above State Highway 139 and the northwest side of Black Mountain) and the range of abrupt mountain peaks on the west (i.e., Whaleback and Fox Mountains). Other faulting that modified the lake and area is evidenced by such features as Buck, Rocky and Troxel Points and the steep ridge on the east side of Papoose Meadows. Thus, the Eagle Lake area has the structure of the Basin and Range geomorphic province incorporating the older rocks of the Sierra Nevada province in the south and newer rocks of the Modoc Plateau province elsewhere.

The majority of the Eagle Lake Basin reflects a landscape altered by volcanic activity with cinder cones, volcanoes and extensive lava flows. One of the more recent lava flows (10 to 20 thousand years ago), extruded from Black's Mountain damming the old Willow Creek drainage to the east which caused the lake level to rise, later resulting in a closed basin effect as the water level lowered with climatic changes (Gester, 1965). Prior to the "closing of the hydrologic basin", an open stream at elevation 5,160 feet (Guyton) existed during Pleistocene time that connected Eagle Lake with Honey Lake (once over 300 feet in depth) and other Lahontan Lakes of the Great Basin permitting fish and mollusks (shell fish) to migrate into Eagle Lake. Most of the native species of fish and mollusks that still thrive in Eagle Lake are of Lahontan origin.

-Soils-

The soils of the Eagle Lake area are generally of volcanic origin and underlain with basalt at varying depths. The soils have low to moderate

erosion potential with relatively rapid subsurface permeability capable of ready transmission of subsurface waters.

-Geologic Hazards-

Earthquake Hazards

The Planning Area is located in Seismic Zone III as designated by the Uniform Building Code and the California Division of Mines and Geology. The zone designation indicates that earthquakes of highest severity and intensity can occur in this area resulting in probable major damage.

Earthquake activity can be expected to occur in the future as evidenced by the numerous faults in the area that were responsible for the development of the Eagle Lake Basin. The greatest recorded earthquake of more recent times occurred on July 21, 1921, which had an intensity of 5 on the Richter Scale, the epicenter being in the lake bottom (Kemnitzer, 1921).

Earthquake hazards that result in damage during earthquakes include surface rupture, landslides and failure of structurally poor ground. The location of areas having sensitivity to seismic events is contained in Volume 14, Land Capability Analysis, of the Eagle Lake Planning Study. Potential also exists for a seiche to occur during a seismic event. A seiche is a seismically induced wave on a lake which can inundate shoreline areas in a similar manner that a tsunami can effect coastline areas.

Volcanic Hazards

The general area is susceptible to future volcanic activity as evidenced by the 1914-15 eruption of Mount Lassen and, more recently, the eruption of Mount Saint Helens further up the Cascades Range in Washington.

The upper reaches of the Pine Creek drainage portion of the Eagle Lake Basin enters Lassen Park less than 25 miles west of the lake. Although a remote possibility, a future eruption of Mount Lassen could significantly effect the Eagle Lake Basin and surrounding area.

-Mass Wasting-

This term means the downslope movement of soil and rock due to the influence of gravity. It can include small masses of material moving almost imperceptibly (evidenced by down tilted fence posts and telephone poles) or large rapid movements such as avalanches.

The majority of movement in the basin has been small amounts moving very slowly. There are no mapped landslides within the study area. However, poorly located road excavations or other construction activities as well as earthquakes could trigger landslides in the steeper sloped areas (Mooring, Eagle Lake Basin Planning Study, Vol. 2, page 37).

-Subsurface Discharge-

Nearly 80% of the Eagle Lake area is underlain by basaltic lava characterized by numerous open cracks, fractures and lava tubes which lend to its rapid subsurface permeability characteristics. As such, the soils and geology of the area are generally poor for septic tanks and leachfield systems because of their inherent inability to assimilate such subsurface

**RVA.**

discharge. Since Eagle Lake is largely maintained by subsurface springs and underflow, if the groundwater is polluted with chemical wastes or pathogens, so will the lake water. (Mooring, Eagle Lake Basin Planning Study).

-Erosion Potential-

The soils of the Eagle Lake area generally have a low to moderate erosion potential. With additional development and increased land coverage with impermeable surfaces, nutrient loading from erosion and urban runoff could rapidly accelerate the eutrophication of Eagle Lake. (California Regional Water Quality Control Board, Lahontan Region, Water Quality Status Staff Report, April, 1981)

IV-2-H Geothermal

Geological zone location, surface evidence and an expressed interest¹ by private firms to conduct geothermal exploration activities in the area indicate a potential for the existence of a geothermal resource in the Eagle Lake Basin. The following excerpt² briefly describes that geothermal potential:

In recent years, attention has been focused on the Cascade Range and western Basin and Range province as areas of above-average potential for the production of geothermal heat (hot water and/or steam). Active investigations by the US Geological Survey, various universities, and many private companies are under way.

Eagle Lake lies within a geological zone that connects the Susanville basin with Stephens Pass near Medicine Lake and, ultimately, with the High Cascades of southern Oregon and northernmost California. The existence of this zone is based on analysis of: rock-fracture patterns and the ages of fracturing; anomalous variations in the strength of the earth's gravitational field; and ages of volcanic rocks erupted from vents in or near this zone.

The west side of Eagle Lake (Brockman Flat area) is marked by young fractures (faults) along which movement has continued into relatively-recent time, by numerous fracture-controlled vents of very young lava flows (including those that formed Brockman Flat), and by anomalies in the earth's magnetic and gravitational fields. These features, combined with the location of Eagle Lake in the major zone that connects the High Cascades with the faults and basins along the east side of the northern Sierra, indicate a strong potential for geothermal heat within the Eagle Lake basin.

The location, quality and quantity of geothermal resources and its potential for development as an energy source cannot be realized without evidence obtained through exploration operations. These can involve both surface

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1. Environmental Assessment for Conditional Geothermal Leasing, Lassen National Forest, U. S. Forest Service, 1980
 2. Lydon, P.A., Consulting Geologist, 1980, Personal Communication, Letter to Mark Totten, Lassen County Planning Director

and subsurface measures including aerial and surface reconnaissance; geophysical exploration including resistivity, microseismic, magnetic and gravity surveys; and drilling of temperature gradient holes (from less than 500 to 3,000 feet deep) and test wells (up to 10,000 feet).

If results of exploration activities prove feasible, a geothermal field may be developed for the production of power and/or other applicable uses of the heat such as agricultural and industrial. Development of the resource for electrical power generation could involve the drilling of a series of production wells; and construction of generation, power transmission and other support facilities.

Geothermal exploration and development in the Eagle Lake area could result in potentially significant, even irreversible, environmental effects. These would vary according to such factors as location and compatibility with existing uses, location as to environmentally sensitive areas, extent of surface and subsurface disturbance, the particular type and phase of activity, and to the employment of effective mitigation measures. Geothermal projects potentially could result in impacts upon noise, air and water quality, odor, fish and wildlife, aesthetics, adjoining land uses and the economic and social factors of the area. Impacts resulting from subsurface activities (i.e., drilling test and production wells, extracting and reinjecting fluids) could include subsidence, induced seismicity, and the puncturing and alteration of aquifers possibly resulting in the transmission of geothermal fluids to groundwater entering Eagle Lake.

Comprehensive evaluation of these potential effects would be necessary pursuant to applicable state and federal environmental laws, policies and guidelines as well as consistency with land use management plans if geothermal projects are to be considered in the Eagle Lake Basin.

IV-3 AGRICULTURE

Livestock grazing is the most important agricultural use in the Eagle Lake Basin and Planning Area. Although residential and recreational uses conflict with livestock grazing in some locations, there is still extensive suitable range throughout the area. Most suitable areas for livestock grazing are managed and owned by the U. S. Forest Service, Bureau of Land Management and private timber companies as well as private cattle ranches. The viability of livestock grazing in the Eagle Lake area is mainly due to the large size of the existing private operating units, their management practices, and lack of other conflicting uses.

Open range grazing generally occurs from mid-April into October. Range management practices are designed to support optimum levels of livestock grazing while perpetuating and improving the quality and extent of the range and other compatible beneficial uses. Most operators in the Willow Creek Valley have "cow-calf operations" and winter their livestock on their ranches. Operators from outside the area move their stock to the Honey Lake or Sacramento Valleys during the winter months.

Existing levels of livestock grazing around Eagle Lake, including shorezone areas, have not shown a demonstrable adverse effect on lake water quality, wildlife, or shorezone recreation and may effectively be removing nutrients from the basin (Rimbey, 1980). The following excerpt¹ more specifically describes the impact of livestock grazing in the Eagle Lake Basin:

1. California Regional Water Quality Control Board, Lahontan Region, Report on the Water Quality Status of Eagle Lake, April, 1981

The quantity of nitrogen and phosphorus from the metabolic wastes of this number of animals is undoubtedly large. It is unlikely, however, that any appreciable amount of nitrogen or phosphorus that is deposited on the land reaches surface streams, ground water or the lake itself. As waste material decomposes the nutrients that enter the soil are probably taken up very rapidly by range vegetation. In fact, it is highly likely that there is a net removal of nutrients from these lands by the grazing cattle as they fatten during the summer months. In a grazing situation in which the range is in good condition, as with the Eagle Basin, and there is no import of feed, cycling is usually sufficiently rapid within the terrestrial components of the ecosystem to prevent loss to the aquatic components.

The Willow Creek Valley, at a somewhat lower elevation, has good soils and ample surface and groundwater available for irrigation. It is the only portion of the Planning Area with developed irrigation for the pasturing of livestock and also produces excellent forage crops of alfalfa and hay.

IV-4 CULTURAL RESOURCES

IV-4-A Archaeological

Early uses of the Eagle Lake area by Native Americans were primarily seasonal visits by hunting, fishing and gathering parties of the Atsugewi (Pit Rivers) from the Modoc Plateau, the Maidu from the northern Sierra Nevada and the Paiute from the Great Basin. Eagle Lake apparently played an important role in providing subsistence needs and activities for these groups despite their diversity in linguistics, culture and geographical origin-ation.

Archaeological research in the Eagle Lake area has not been comprehensive or systematic. Most work consists of surveys required of applicable state or federal laws for environmental assessments of land development projects (i.e., proposed timber sales, road improvements and realignments, land exchanges, recreational facilities, and subdivisions) to ensure compliance by the federal, state or local agency having jurisdiction for such review.

Examples¹ of work performed include: Ridgeway (1977), survey of several miles along potential Cal-Trans realignments of State Highway 139 at the northeastern lake margin in which 25 prehistoric sites were recorded; two intensive surveys: (Trayser and Trayser, 1978; Trayser, Trayser, and Duff, 1978) of portions of Spaulding Tract were conducted by the U. S. Forest Service for proposed land exchanges and resulted in the recording of 13 prehistoric sites in a small area; the Lassen County Department of Public Works contracted with California State University, Chico, for the testing and evaluation of CA-Las-345, a large multi component occupation site at the mouth of Pine Creek that was apparently a seasonal occupation oriented to fishing.

In 1978, Bureau of Land Management personnel (principally Corson and Smith), conducted² a very limited, random sample type survey of the Eagle Lake

1. Eagle Lake Basin Planning Study, Vol. 11, Cultural Resources, pgs. 5, 6

2. IBID, pgs. 9, 14

area which resulted in the recognition and recording of 102 previously un-recorded cultural sites. Inferences¹ drawn from the survey include the following in summary:

1. The main attraction of the basin appears always to have been the Eagle Lake shoreline and its immediate flanks.
2. Attractiveness to the shoreline was largely reflected by hunting activity. Shoreline hunting stations (for blinds and butchering) were strongly developed. Some of the many hunting blinds and/or sites now used by modern waterfowl hunters may be aboriginal.
3. Away from the lake margin, the number and diversity of cultural sites (both prehistoric and historic) diminish rapidly.
4. Further reason for the apparent low intensity of use of much of the basin is due to the higher elevations and severe winters. Ethnographic data indicates none of the ethnic groups occupied or visited Eagle Lake in the winter.

IV-4-B Historical

Because of its remoteness and rugged terrain, it was not until 1850 that Anglo discovery of Eagle Lake was made for which credit is given J. G. Briff and Peter Lassen. Ten years later, William Dow, the first white settler in the area, set up a livestock operation on Pine Creek near the present day Spaulding Tract. The remains of Dow's cabin can still be observed.

Although the intensity of livestock ranching slowly increased, the majority of the operators resided around Eagle Lake only seasonally, wintering their stock in milder climates. Albert Gallatin, one of the largest early operators, summered as many as 20,000 sheep on 40 miles of lakeshore land purchased between 1880 and 1890 (Amesbury, 1971 and Eagle Lake Basin Planning Study, Vol. 11, page 7). Much of Gallatin's original holdings are now under management by the U. S. Forest Service. Livestock grazing continues to be an important use in the basin although numbers of livestock around Eagle Lake have been reduced to around 1,000 during the summer grazing season.

Major timber harvesting operations began in the heavily timbered western and southern portions of the basin in 1919. The growing and harvesting of timber continues to be an important use in the primary watershed area of the Eagle Lake Basin.

Several attempts at exploiting the waters of Eagle Lake to provide irrigation to expand the agricultural potential of the Honey Lake Valley, 30 miles to the southeast and over 1,000 feet lower in elevation, started in the 1870's.

The most recent of such schemes was initiated by an engineer, Leon Bly, and completed by the Tule and Baxter Creek Irrigation District. This project involved the construction of a 7,300 foot long tunnel, running through a basalt plateau to the headwaters of Willow Creek and downstream through a network of canals, flumes and siphons. The diversion of Eagle Lake water through the Bly Tunnel occurred from 1923 until it was blocked and abandoned in 1935. The project was beset by engineering problems, inadequate supply, drought, a lake level that dropped 20 feet and eventual bankruptcy.

1. Eagle Lake Basin Planning Study, Vol. 11, pgs. 26, 27

The recreational potential of Eagle Lake is largely realized through its natural amenities. Recreational activities at Eagle Lake are outdoor oriented with the lake serving as the attraction and focal point.

Eagle Lake remained relatively "undiscovered" for its recreational potential until the early 1960's. By that time, access to the lake had improved and fame of the successful revival of the Eagle Lake Trout was spreading, probably the most influential factor in the popularizing of the lake. A growing number also discovered the lake for its other unique natural amenities which attract appreciators of wildlife, scenery and quality water-oriented recreational experiences in a setting not found at other lakes where overcrowding and extensive development and commercialization have all but eliminated that which Eagle Lake still offers.

During the 1960's, public and private developments began occurring around the lake to accommodate residents and others attracted to its shores. Recreational development in the southern portion by the U. S. Forest Service has included the construction of five campgrounds offering 382 spaces; a public beach and picnic area; an amphitheater; Eagle's Nest, a 42-unit summer home tract; and the Aspen Grove launching facility completed in May, 1981, located near the County operated Eagle Lake Marina. In the northern portion, public improvements include a 20-space campground by the Bureau of Land Management and boat launching facilities by the County at Spaulding Tract and Stone's Landing. An unimproved boat launch and lake access exists on a parcel dedicated to the County at Stone's Subdivision No. 6.

The heaviest recreational use occurs from May into September primarily in the south portion where public facilities are more available. The most popular summer activities include fishing from boat and shore;¹ boating activities including sailing (sanctioned regattas held and instruction available through Lassen College), powerboat cruising and water skiing;² and camping and picnicing.³ In the fall, fishing continues to be popular while the large numbers of migratory waterfowl that "stop over" at the

1. California Department of Fish and Game estimates based on creel checks indicate average of 250 angling parties fishing from boats per day during summers of 1975 to 1980. California Fish and Game Commission set the 1981 season from the third Saturday in May to the end of December, with a bag limit of 3 Eagle Lake Trout, to protect spring spawners and maintain a quality fishery.
2. The Lassen County Sheriff's Department is responsible for patrolling and enforcing applicable state and local boating regulations and maintaining boat counts. Summer month boat counts for 1978 and 1979 averaged 400 boats per day.
3. In 1980, Lassen National Forest recorded 115,800 visitor days of use of their camping and picnic/day use facilities. USFS data indicate a trend to extended visits, destination type use by campers. Campgrounds are open an average 154 to 168 days per year.

Operator	Campground	Spaces	PAOT*
USFS	Aspen Grove	20	100
USFS	Eagle	51	255
USFS	West Eagle Group	60	300
USFS	Merrill	181	905
USFS	Christie	70	350
BLM	Bald Hills	20	100
USFS	Undeveloped Sites, North Basin	2	10
		404	2,020

*"Persons at one time" design capacity, average family size per camp unit

lake provide opportunity for hunters. Deer hunting, also popular around Eagle Lake, generally occurs in October and signals the closing of public campgrounds at the season's end. Cross-country skiing, snowshoeing, and snowmobiling are becoming increasingly popular in the higher elevations in the south portion. Those interested in nature study come to Eagle Lake throughout the year to observe and photograph the unique diversity of species of wildlife and vegetation found in the area.

There are no established hiking or equestrian trails in the Eagle Lake area. It is likely that future demand and attraction for such trails would be directed to the unique, but environmentally sensitive, features of the area. Because the development and use of trails could result in disruption of environmentally sensitive areas, their future development in response to such a demand would warrant careful review of potential environmental impacts.

IV-6 COMMUNITY LAND USE

IV-6-A Residential

-Existing Subdivisions-

Nine subdivisions have been created in the Planning Area, including one which lies outside of the basin portion. Except for the Spaulding Tract, which was approved by Lassen County in 1924, all of the subdivisions were created between 1961 and 1972. As of 1980, less than 30% of the 1,734 building sites (approximate total) of these subdivisions have been developed. Of these residences, 84% were utilized only on a seasonal basis. It is likely, however, that the percentage of permanent residential use will continue to increase during the planning period.

All of the subdivisions utilize individual septic systems for sewage disposal. The Bengard Subdivision and a portion of Spaulding Tract have limited water supply facilities through private or mutual water companies while the remainder use individual private wells as their domestic water source.

Spaulding Tract. The first subdivision at Eagle Lake, Spaulding Tract was approved in 1924 for the creation of 5,961 lots, most of which measured 30 x 100 feet in size. In 1961, the owners of a large unsold portion of the subdivision applied to the California Department of Real Estate for a public report to enable the sales of the remaining lots to proceed. At that time it was determined by the California Department of Public Health that combination of the original lots would be necessary to provide the area necessary to isolate well supplies from adjoining sewage disposal systems.

The Department of Public Health recommended to the Department of Real Estate, based on percolation test data supplied by the applicant's engineer, that lots be combined to provide minimum areas of 4 lots (12,000 square feet) or 6 lots (18,000 square feet) depending upon the location in the subdivision. The California Department of Real Estate issued their final public report in September, 1962 requiring that the sale of the lots be combined as recommended.

At the present time, the minimum area required for and/or suitability of a potential building site for the use of an individual septic system at Spaulding Tract is determined by the Lassen County Sanitarian.

Stones Subdivisions. The first in a series of six increments to the Stones Subdivisions, located along the northwest shore and in Buck Bay at Eagle Lake, was approved in October, 1961. The last of these units was approved in June, 1972 culminating in the subdivision of 270 acres into 244 lots.

Bengard Subdivision. This subdivision, approved by the County in May, 1968, is located on Eagle Lake between Stone's Subdivision Units No. 1 and 2. The Bengard development consists of 12 acres subdivided into 25 lots, one of which serves as a common area with a beach area, boat dock and community water supply facilities.

Willow Creek Pines. This is the only subdivision in the Planning Area located outside of the Eagle Lake watershed. Consisting of 78 acres, it was approved by the County for 68 lots in 1964. Several existing small parcels in the immediate vicinity of Willow Creek Pines also offer potential residential building sites.

Eagle's Nest Tract is a 42 lot summer home tract of 21 acres of land leased and controlled by the U. S. Forest Service. It was created in September, 1956. As such, it is not a subdivision. The development utilizes individual septic systems for sewage disposal and has a community water supply system. Each lot has been built upon pursuant to U. S. Forest Service criteria. Eagle's Nest is located on the southeast shore of Eagle Lake several miles north of Gallatin Beach.

-Houseboats-

Houseboats are defined¹ to include "watercraft. . .designed or fitted out as a place of habitation and. . .not principally used for transportation."

The use of houseboats on Eagle Lake has been minimal² as compared with other lakes in Northern California. For example,³ on Shasta Lake problems attributed to residential occupancy of the lake surface and dispersed camping on public lands along the lakeshore from the use of houseboats include conflict with other uses of the lake, problems of pollution and solid waste disposal, disruption of aesthetics and fire and resource damage.

The Open Space element of the Lassen County General Plan as adopted in June, 1971 and, Ordinance No. 411, Implementing the Open Space Element of the County General Plan, specifically designates and zones Eagle Lake as Open Space. Residential use is not permitted within Open Space zoning districts pursuant to Lassen County Ordinance No. 293 A-21. Such Open Space policies, laws, and regulations are consistent with the definitions, intent and mandates of California Government Code Sections 65560 et. seq. As such, the use of houseboats on Eagle Lake is precluded by the preceding provisions.

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1. California Water Code, Section 13901
 2. Lassen County Sheriff's Department reported that two private houseboats were used on Eagle Lake during the summers of 1978 and 1979.
 3. Source: Shasta-Trinity National Forest, Shasta Lake National Recreation Area Plan, 1976

IV-6-B Commercial

Commercial development at Eagle Lake has been limited. This is basically due to a low level of need and demand because of such factors as a small populace of permanent residents and relatively short terms of use by seasonal residents and visiting recreationists; the destination type use of recreationists that typically arrive at Eagle Lake prepared for an extended stay with supplies procured from their place of origination or at the shopping centers in Susanville; and the close proximity of Eagle Lake to the City of Susanville.

Most of the commercial uses at Eagle Lake are located in the communities at the north portion, i.e., Spaulding Tract and to a lesser extent, Stones. These communities are able to support some commercial development as the numbers of permanent and seasonal residents is growing with the buildout of the existing subdivision lots, and they are at a somewhat longer distance than the south portion of the lake to Susanville.

Commercial uses at the lake have been primarily oriented toward recreational supplies, convenience goods and services and eating and drinking establishments. Some entrepreneurs diversify their business to maintain viability. Such uses by location include:

Stones

Restaurant, including on and off sale liquor, food

Spaulding Tract

- 1 general store with gas pumps and boat rental
- 2 bar/restaurants
- 1 real estate office
- 1 marine sales/service shop
- 1 building contractor
- 2 excavating/grading contractors
- 1 plumbing supply/service
- 1 RV and trailer park

Eagle Lake Resort

Restaurant, cabin rentals

Eagle Lake Marina

Convenience store

Boat rentals

IV-6-C Institutional

Institutional uses at Eagle Lake (i.e., public and quasi-public uses of buildings) include the Eagle Lake Field Station, operated by California State University, Chico, located near the Bly Tunnel on the east side of the lake; the Eagle Lake Youth Camp, operated by Lassen County, located a short distance north of the Field Station; a California Department of Forestry fire station, located at the south end of the lake at the intersection of Eagle Lake and Gallatin roads; the Spaulding Volunteer Fire Department, located at Spaulding Tract; the summer maintenance facilities of Lassen National Forest at the old Gallatin House near Gallatin Beach; and the Eagle Lake Trout egg-taking facilities near the mouth of Pine Creek operated by the California Department of Fish and Game.

With the exception of the Spaulding Volunteer Fire Department, all of the institutional type uses at Eagle Lake are seasonal.

IV-7 POPULATION

The Eagle Lake Basin Planning Study estimated a permanent, or year-round, population of 217 for the Planning Area in 1978.¹ This figure was derived basically from multiplying an estimated 73 dwellings by an average of 2.98 persons per household.²

To update these estimates, the Lassen County Planning Department has utilized recent information from the 1980 Census. The populated portions of the Planning Area, with the exception of the Willow Creek Pines area, is contained in Enumeration District No. 266 (ED 266). Preliminary figures indicate a population of 177 people occupying 80 dwellings at an average of 2.21 persons per dwelling. Since the census was taken on April 1, 1980 and before the beginning of "seasonal summer" use, it can be assumed that the census figures are acceptable for the year-round population and permanent residences.

The population of the Willow Creek Valley cannot be determined from current census information. The Eagle Lake Basin Planning Study estimated that there were five dwellings that could be considered permanent with a population of 15. Recent interviews with local residents suggest that these are acceptable figures.

Accumulating the above data, it can be estimated that the permanent population of the Planning Area is approximately 192 people living in 85 dwellings at an average of 2.25 persons per dwelling.

The seasonal population is derived from the total number of dwellings multiplied by the average number of persons per dwelling.³ In the Eagle Lake Basin Planning Study, an estimated 425 dwellings with an average of 2.98 persons per household accounted for approximately 1,266 seasonal residents.

Utilizing the 1980 Census information, the indicated preliminary total of 498 dwellings for ED 266, plus five dwellings outside of ED 266, add up to 503 dwellings. At an average of 2.25 persons per dwelling, the seasonal population would be approximately 1,132.

The character of summer use for dwellings near Eagle Lake is obviously different from the relatively light residential use reflected in the preliminary 1980 Census figures. Summer usage is mostly of a recreational nature and should include factors such as families on vacation and additional houseguests. A more creditable average of four persons per unit is commonly used by federal agencies in determining campsite capacity. Directly applied to the total of 503 dwellings, the seasonal population at four persons per dwelling would be 2,012.

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1. Eagle Lake Basin Planning Study, Vol. 12, pgs. 11-15
 2. The average of 2.98 persons per dwelling was the 1970 Census average for the Westwood Census Division of which the Planning Area is a part.
 3. Includes summer homes, trailers, trailer spaces in existing subdivisions.

In summary, the following figures are accepted as the population data for purposes of the present study:

Permanent Dwellings	85
Permanent Population	192
Average Persons per Dwelling	2.25
Total Dwellings	503
Seasonal (summer) Population @ 2.25 Persons per Dwelling	1,132
Seasonal (summer) Population @ 4 Persons per Dwelling	2,012

IV-8 NOISE

The most significant and frequently occurring sources of disruption to ambient noise levels in the Eagle Lake area are from powerboats and, to a lesser extent, aircraft. Noise emanating from the louder powerboats is often audible for long distances over the water. Aircraft noise levels are the greatest during takeoffs. At their present levels of use during the summer, the frequency of occurrence of noise disruption by powerboats is greater than that of aircraft taking off at the Spaulding Airstrip.

Other typical noise sources that are noticeable in the Planning Area include local construction and logging activities, firewood cutting, vehicular traffic, and in the winter months, snowmobiles.

The Noise Element of the Lassen County General Plan provides noise level standards for various land use classifications and serves as the County policy regarding this matter. Maximum allowable noise levels from most typical sources are governed by state or federal agencies. As an example, the Lassen County Sheriff's Department is responsible for patrolling the lake and enforcement of the California Boating Law which includes maximum allowable noise levels for motorboats. The levels and occurrence of noise from given sources should not exceed or conflict with the maximum acceptable noise levels for the various land use classifications as provided by the Noise Element of the Lassen County General Plan.

IV-9 PUBLIC SERVICES AND FACILITIES

IV-9-A Transportation

-Airports-

The Spaulding Airstrip is located between the Eagle Lake shoreline and The Strand (County Road No. 247) on the east side of the Spaulding Tract. It is classified as a Basic Utility I Airstrip. A County facility, the airstrip was improved in 1980 with the paving of its surface.

Use of the Spaulding Airstrip includes recreational flying and transportation of residents and visitors as well as for emergency purposes including landings, fire suppression activities, delivery of medical equipment, and medical evacuation. Estimates of average numbers of takeoffs and landings at the airstrip in 1981 range from 30-40 per month in January and February to 150-200 per month during the summer.¹

1. Personal communication with D. W. Loy, Capt. USMC Ret. CCS, The Strand, Spaulding Tract (resident)

Maintenance of the Spaulding Airstrip at its present level of improvement and continuation of the existing levels of air traffic activity will serve to limit the human safety hazard potential of its close proximity to residences in the existing subdivision and the impacts on bird life occurring in the vicinity of the airstrip.

Glenn Field, a private airstrip located immediately west of Eagle Lake Resort at the south end of Eagle Lake, is constrained by steep topography to the south and by the alignment of Eagle Lake Road (County Road No. 201) to the north which precludes its ability to meet minimum safety standards. Therefore, use of this airstrip is to be discontinued.

-Roads-

County. The Eagle Lake Road (County Road No. 201), a select arterial, is the major County road in the Planning Area with respect to traffic volumes and access to the south and west sides of the lake. A project that will result in the reconstruction and paving of the entire route is expected to culminate by 1983 with the completion of a remaining stretch of roadway that lies between Spaulding Tract and the Eagle Lake Resort.

Other important County roads in the Planning Area include Merrillville Road (County Road No. 226) which serves as access from State Highway 139 to Willow Creek Pines subdivision and to roads serving Eagle's Nest and the south end of the lake, the CSUC Field Station and the Lassen Youth Camp; the Gallatin Road (County Road No. 231), which serves as the access from Eagle Lake Road to the Eagle Lake Marina and other Gallatin Beach area recreational facilities; and the Spaulding Road (County Road No. 518) which serves as the access from the Eagle Lake Road to the Spaulding Tract community.

The remainder of the roads in the Planning Area under the County road system include minor subdivision streets and roads primarily intended for resource production and agricultural purposes.

State. State Highway 139, a classified minor arterial highway route between Susanville and the Oregon state line, serves as the major route to the north end of Eagle Lake.

Portions of State Highway 139 along the northerly shore of Eagle Lake are subject to deterioration (from wave erosion; lake ice buildup and ice floes being pushed up by high winds) above lake level 5,107 feet and inundation above 5,110 feet. As the lake returns to historically higher levels the retention of existing levels of transportation service will require the raising, relocation or other environmentally acceptable modification of portions of the highway.

Other Roads. There are improved and unimproved roads and jeep type trails in the Planning Area that are not maintained and/or controlled by a public agency and for which legal public access has not been acquired. Some of these roads cross both public and private lands. The primary use and intent of many of these roads is for timber harvesting and livestock grazing activities and other resource management purposes. They may also be utilized by the public for access to firewood cutting areas, hunting in the fall, and in the winter as trails for crosscountry skiing, snowshoeing and snowmobiling. Some of the existing unimproved roads and trails receive almost exclusive use for recreational purposes such as access by fishermen or hunters.

An access route largely used by the public, but for which public access has not been acquired, involves about 6 miles of private roadway from the end of Merrillville Road (County Road No. 226) that serves two public facilities, the CSUC Field Station and the Lassen Youth Camp as well as access to the lake.

Off-Road Vehicles (O.R.V.'s). Much of the terrain of the Planning Area is particularly rugged, lending to the extent of its natural roadless character and limited use by off-road vehicles.

Use of vehicles off existing roads and trails can disturb soils and vegetation resulting in erosion and increased nutrient loading to Eagle Lake. At lower lake levels, some areas become accessible and subject to vehicle use that can result in adverse impacts to the shorezone.

Bicycle Lanes. At the present time there are no bicycle lanes or designated bicycle routes in existence in the Eagle Lake Planning Area. With the increasing popularity of bicycling as a recreational activity and an alternate mode of transportation, the demand and need for bicycle lanes could warrant that future improvements of roads in the Eagle Lake area include such provisions.

IV-9-B Solid Waste Disposal

A comprehensive County solid waste management plan was completed in 1977. This plan recognized the need for a planning process to identify existing and future responsibilities at the local level for proper handling and disposal of solid wastes.

At present, the plan indicates that solid wastes, primarily residential wastes are taken to two transfer stations located within the basin. The first transfer facility is located on Bureau of Land Management property in the northwest portion of the basin and the second on U. S. Forest Service property in the southwest portion of the basin. Both of these transfer facilities are located on completed landfills, formerly known as Stones Disposal Site and Spaulding Disposal Site.

The facilities are equipped with 50 cubic yard drop boxes, which are transported to the Lassen County Sanitary Landfill which is 30 miles to the south of the Eagle Lake area near Johnstonville.

As future disposal needs increase in conjunction with land development, additional containers will be utilized.

IV-9-C Sewage Treatment

The method of sewage disposal for virtually all development around Eagle Lake is by individual septic tank/leachfield systems. An exception is the campground and recreation facilities at the south portion of the lake which are served by the U. S. Forest Service sewage treatment facility at Little Merrill Flat, within the Eagle Lake watershed.

The following excerpt¹ describes some of the concern regarding the use of septic tank systems in the Eagle Lake Basin as related to the typically high percolation rates of the soils and geologic formations:

In the volcanic rocks, the predominant volcanic formation underlying the existing and proposed community areas is basalt; there is potential for almost a direct discharge through crevice and cracks to the lake. In other areas, the seepage delay could be a number of days, months, or perhaps a year or more, primarily because of distance from the lake. One can generalize, but the septic tank effluent will eventually reach the lake. The effluent may be biologically stabilized with only the inorganic nutrients remaining, but it is these nutrients that are critical problems to Eagle Lake's water quality.

Nitrogen in septic tank effluent is about 80 percent ammonia and 20 percent organic nitrogen. Phosphorous and iron are also of environmental concern. If the nutrients from liquid effluent or from the leachates of septic tank sludge are allowed to reach surface water or reach the lake through subsurface drainage, these nutrients can accelerate eutrophication because they are essential nutrients of algae and aquatic needs, and have been documented as the limiting or most needed constituent to greatly accelerate the non-reversible process of eutrophication of Eagle Lake (turning it permanently green with algae).

In the interest of preventing the pollution of surface and groundwater drainage systems in the basin and protecting the water quality of Eagle Lake, the Lahontan Regional Water Quality Control Board has responded to a request by Lassen County and the other members of the Eagle Lake Interagency Board of Directors to conduct a comprehensive water quality monitoring program. The results of this program will be an updated Water Quality Control Plan for the Eagle Lake Basin including a determination of the status and trends of the water quality, levels of eutrophication and the appropriate method of and timing for development of wastewater treatment facilities.

IV-9-D Water Supply

The domestic water supply for the existing residential subdivisions is largely supplied by individual private wells. The Bengard subdivision and a portion of the Spaulding Tract (organized under a mutual water company, a limited system, does not provide fire protection) utilize community type water supply systems. All developments on public lands, i.e., Eagle's Nest summer home tract, campgrounds; and recreational facilities, utilize central water supply systems.

With the continued buildout of existing subdivisions and the trend toward more permanent residents, the increased use of individual private wells could lead to a reduction in the quality and quantity of domestic water supplies and in the groundwater flow to Eagle Lake.²

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1. Eagle Lake Basin Planning Study; Vol. 15, Land Use Management Plan, pg. 35
 2. Approximately 13-20% of domestic water used is consumed in a manner that makes it unavailable to groundwater, i.e., drinking, evaporation, transpiration, etc. Source: Todd, D. K., Water Encyclopedia, Water Information Center, Port Washington, New York, 1970

IV-9-E Utilities - Power and Telephone

-Electrical Power-

Electrical power is provided to the Eagle Lake Planning Area by CP National Company from its Chestnut Substation located on the north side of Susanville. The substation has a capacity of 3,750 kilowatts which has provided adequate quantities of electrical power.

CP National Company has reported¹ that at the present growth rate, the existing system should serve the Eagle Lake Project area for three or four more years with no problems provided that some minor improvements are made. The CPN engineers stated that they foresee the construction of a transmission line of approximately 60,000 volts from the five mile substation in Susanville to the vicinity of the south shore of Eagle Lake in the future. This transmission line would be constructed close to Eagle Lake Road, (County Road 202), for service convenience, yet as out of sight as possible and in as straight a line as possible. CPN is budgeted to investigate rights-of-way for this route in the current year.

The transmission line would probably terminate at a new substation built in the vicinity of the existing lines near the south shore. It would have a capacity of approximately 3,750 kilowatts which could be distributed east or west. The company stated this new system would increase both the reliability of service and capability to provide more power in the project area.

CP National Company engineers estimated that roughly 50 per cent of the homes in the project area are all-electric homes and 50 per cent are half-electric homes. They estimated that all-electric homes have a 6 to 7 kilowatt demand and half-electric, a 4 kilowatt demand regardless of whether they are seasonally or permanently occupied. Based upon these estimates, it was projected that approximately 1,780 dwellings in the project area, which represents a buildout of all potential lots within existing subdivisions, (see occupancy estimates in Volume 12 of the Eagle Lake Basin Plan), would create a demand equal to two-thirds of the present demand of the City of Susanville. This demand could be met by a new transmission line and substation being constructed by CPN.

-Telephone Service-

Telephone service to the Eagle Lake area is provided by Citizens Utilities company of California. The main telephone lines extend from Susanville generally north along State Highway 139 toward the north end of the lake. This is currently a two circuit system with 16 channels. Calls are directed to a switching center located near Stones Landing. A microwave system is scheduled to begin operation in the summer of 1983 and will replace most of the current line system.

IV-9-F Police

Police protection and law enforcement for the Planning Area, including the lake surface, is provided by the Lassen County Sheriff's office. The State Fish and Game, U.S. Forest Service, and Bureau of Land Management field representatives have limited jurisdiction in dealing with enforcement problems and are usually restricted to the enforcement of their own rules and regulations on the lands held under their jurisdiction. The County sheriff responds to certain criminal and domestic problems on federal and state property.

1. Eagle Lake Basin Planning Study, Vol 15, pg. 45

As with other public services, police protection requirements and the enforcement of federal and state regulations will increase with growth in population.

The public safety and protection programs will need to be expanded as the Eagle Lake Basin grows from its current level of use.

IV-9-G Fire Protection

The majority of the Eagle Lake Planning Area is classified by the California Department of Forestry as having high fire hazard severity potential. This rating is due to the availability of fuel, slope, typically dry summers and the incidence of human activity. Evidence of old major forest fires can still be seen on Fox Mountain and Gallatin Peak, and more recently at the south edge of the basin between Roop Mountain and Coleman Lake.

In the Eagle Lake Planning Area, fire protection is provided by the California Department of Forestry, the U.S. Forest Service and the Spaulding Volunteer Fire Department.

The areas of responsibility for fire protection are split. The U.S. Forest Service has primary protection responsibilities for wildland fires on most of the west side of the lake. The California Department of Forestry protects the remainder of the Planning Area from two stations, the Eagle Lake Forest Fire Station at the south end and the Grasshopper Forest Fire Station located about 3 miles north of the lake on State Highway 139. These stations are open only during the summer fire season, from approximately June 1 to November 1. The Spaulding Volunteer Fire Department primarily responds to structural fires in the Spaulding and Stones communities and will respond outside of their area if called. Although the U.S. Forest Service and California Department of Forestry are primarily responsible for wildland fire protection, these agencies will respond in emergency situations to structural fires if called, particularly if wildland areas are threatened.

IV-9-H Schools

The Eagle Lake Planning Area is located within the Susanville Elementary School, Lassen Union High School and Lassen Community College districts. There are no classroom facilities associated with these school districts in the Planning Area.

In the spring of 1981 it was reported¹ that there were 8 students being bussed to the elementary and high schools in Susanville from the Spaulding and Stones communities at Eagle Lake. This figure had apparently fluctuated between 6 and 9 students in the preceding several years. The school bus being employed also picked up students in Willow Creek Valley and had not as yet transported its capacity of 22 on this route.

The Lassen County Superintendent of Schools office reported that it would require a minimum of 150 to 200 students to support a school or become involved in the building of a new school.

1. Source: Lassen Union High School District personnel

The 1980 U.S. Census figures¹ indicate a permanent population in the lake basin portion of the Planning Area to be 177 persons that reside in 80 dwelling units (2.21 persons/dwelling unit). Therefore, permanent residences would account for approximately 16% of 456 dwelling units, or the total number of existing dwelling units in the Planning Area excluding the outside of Census Enumeration District #266), and Eagle's Nest (a U.S. Forest Service summer home tract).

With an average of .1 student per permanent dwelling unit (at the 1981 figure of 8 students) and assuming continuance of a permanent residential occupancy factor of 16%, there would be 268 dwelling units utilized on a permanent basis at a full buildout of the 1,676 lots which would increase the K-12 student population to 27. Considering the total number of permanent and seasonal dwellings in 1980, the average number of students per dwelling unit is .02.

Although the percentage of permanent residents at Eagle Lake is increasing with the buildout, because of the lack of local employment opportunities and the time and expense of commuting to Susanville, etc., it is very unlikely that the number of permanent residents will exceed the number of seasonal residents during the planning period. Further, because of the historical and expected continuance of a relatively low incidence of families with school age children relocating at Eagle Lake, it is unlikely that any increase in the average number of students per household will closely approach the factor of .5 students per dwelling unit used by the State Department of Education for projecting educational building needs.

IV-9-I Public Health

There are no public health care facilities in the Planning Area at this time. Such facilities and services are available in Susanville and Westwood.

1. U.S. Census Bureau, 1980 Preliminary Count.

V POLICY/IMPLEMENTATION

V POLICY IMPLEMENTATION

V-1 PLANNING AREA

Policy:

The established boundaries of the Eagle Lake Planning Area include the entirety of Eagle Lake, a significant portion of the basin in which it lies and some adjacent areas of influence lying outside of its watershed.

As it is recognized that the Eagle Lake Area Plan is a part of and internally consistent with the Lassen County General Plan, the interpretation, administration and implementation of the policies of the Eagle Lake Area Plan are to be carried out and applied throughout the Planning Area.*

Implementation:

To ensure the integrity and long-term protection of Eagle Lake and the interest of the public as reflected by the policies of the Eagle Lake Area Plan, Lassen County should rezone the remaining private lands of the Eagle Lake Basin located outside of the Planning Area that are not under Timber Preserve Zoning to ensure the continuation of the open space use and protection of the watershed. Such action would be consistent with the Lassen County General Plan as provided for by the Open Space Element for "important watershed and groundwater recharge lands" as well as serving the functions of the other stated open space definitions and intents of the County policy and state law.

The Bureau of Land Management and U.S. Forest Service should be encouraged to assemble important privately owned properties into public ownership through land exchange, purchase, acquirement by easement, etc. as may be deemed in the public interest that lie within the Eagle Lake Basin.

V-2 LAKE LEVEL

Policy:

As contained in the Open Space Element of the Lassen County General Plan, it is the policy of Lassen County that the water level of Eagle Lake be allowed to continue to fluctuate naturally.

This is to ensure the maintenance and enhancement of the water quality of the lake and its retention as a habitat for the dependent wildlife, fishery, and avian resources which also perpetuates the recreational, social and economic values the lake affords to man.

* "The Willow Creek drainage within the plan boundary shall not be subject to the policies of the Eagle Lake Area Plan, except that within a distance of one mile from the hydrologic boundary, Policy V-9 prohibiting the drilling for geothermal, gas, oil, or other hydrocarbon resources shall be implemented."

Implementation:

The member agencies of the Eagle Lake Interagency Board should cooperatively have the principal decision making role involving any action in the sealing of the Bly Tunnel to allow the natural fluctuation of the lake.

The Bureau of Land Management should commence proceedings to acquire public ownership of the tunnel entrance.

V-3 WATERSHED

Policy:

Eagle Lake is largely dependent upon surface and groundwater inflow emanating from its watershed. Those areas designated in the Eagle Lake Basin Planning Study (Volumes 14 and 15) as being highly or moderately sensitive as watershed maintenance areas, that are not otherwise specifically designated for development, are to be protected from uses or conversions that would cause their degradation.

Implementation:

Important watershed areas not in public ownership, or presently under Timber Preserve Zoning, or other compatible open space zoning are to be rezoned as such consistent with the Open Space Element of the Lassen County General Plan.

V-4 WATER QUALITY

Policy:

It is critically essential to maintain and protect the water quality of Eagle Lake, including all ground and surface waters in its watershed, in order to preserve its unique values and integrity. Appropriate provisions for complete water quality control are to be implemented for existing and future development projects and other uses pursuant to the findings and direction of the California Regional Water Quality Control Board, Lahontan Region.

Implementation:

In recognition of the importance of protecting the water quality of Eagle Lake, the California Regional Water Quality Control Board, Lahontan Region, pursuant to their responsibility under the law, must embark on a comprehensive ongoing program of investigation and monitoring of the status and trends of all waste, ground and surface waters that may affect the lake; and, establish, based on findings of evidence, the appropriate standards, regulations and measures for development in the discharge, treatment and disposal of wastewaters, control of erosion and sedimentation and other such related factors that may affect the water quality of Eagle Lake.

V-5 TIMBER MANAGEMENT

Policy:

The existing timber management practices and policies that ensure the protection of prime commercial timberland and the maintenance and protection of the watershed values that these areas afford shall continue. The preservation of timberland for the purposes of open space, wood products and watershed preservation is critically important to retaining the natural character of the Eagle Lake environment.

Implementation:

Private timberland, not presently under Timber Preserve Zoning or specifically designated in the Plan for other uses, shall be rezoned Timberland Preserve Zone, "TPZ"; Agricultural Forest, "A-F"; or, Upland Conservation, "U-C".

V-6 WILDLIFE

Policy:

Protect, maintain and enhance wildlife and their habitats.

Implementation:

All wildlife habitat areas designated on the Wildlife Habitat Quality Map as contained in the Eagle Lake Basin Planning Study, Vol. 7, pg. 38, as being crucial, high or moderately important to wildlife that are not specifically designated by the Plan for other uses, and where incompatible land use conflicts are not pre-existing, shall be rezoned to an appropriate open space classification consistent with the Open Space Element and Ordinance 411. Such appropriate zoning designations to be applied include TPZ, Timber Preserve Zone; O.S., Open Space; O.D., Primitive; and U.C. Upland Conservation.

New development shall incorporate appropriate mitigation measures to minimize disruption to wildlife and their habitat on and adjacent to project sites as designated in the Plan.

V-7 RARE, ENDANGERED AND THREATENED SPECIES¹

Policy:

The critical habitats and territories of rare, endangered and threatened species shall be protected from land use conversions and activities that would further threaten their existence.

Implementation:

Where land use conflicts are not in existence, the established critical habitat sites and/or territories of rare, endangered and threatened species shall be zoned under an open space classification to preclude disruptive uses.

1. Includes all rare, endangered and threatened species (i.e., mammals, avians, amphibians, insects, plants) officially declared such by the federal and state government.

The appropriate responsible public agencies, i.e., California Department of Fish and Game, U.S. Forest Service and the Bureau of Land Management, should designate, monitor and manage the rare, endangered and threatened species in the Planning Area.

V-8 FISHERY

Policy:

Protect, maintain and enhance the fishery of Eagle Lake. The protection of the fishery resource shall receive primary consideration and priority in the management of Eagle Lake.

Implementation:

The California Department of Fish and Game shall continue their appropriate effective management program of maintaining and enhancing the excellent quality of the Eagle Lake fishery.

V-9 GEOTHERMAL, OIL AND GAS

Policy:

The long term protection of the water quality of Eagle Lake and its sensitive dependent aquatic and terrestrial ecosystems is a priority over the need for the exploration and development of the potential energy resources of the basin and the threat that such activities pose to the uniqueness and integrity of the lake and basin.

Subsurface exploration for geothermal, gas, oil or other hydrocarbon resources shall be precluded in the Eagle Lake Basin because of the potential for the occurrence of significant irreversible adverse effects on the environment. Such subsurface activities could not be mitigated to a reasonable degree of certainty that would assure the long term protection of Eagle Lake.

V-10 AGRICULTURE

Policy:

Agricultural lands must be protected from conversions, non-agricultural developments and other land use conflicts that would be detrimental to this important asset.

Implementation:

To ensure consistency with the General Plan and the continued viability of the agricultural use of the Planning Area, the private lands used for the production of food and fiber shall be zoned, pursuant to Lassen County Ordinance No. 411, to U.C., Upland Conservation, Agricultural Preserve or other appropriate open space classification. Such lands lying within the Eagle Lake watershed portion of the Planning Area should receive priority consideration in this matter.

The California Regional Water Quality Control Board, Lahontan Region, should analyze livestock grazing in the shorezone to ensure that significant water quality problems do not occur.

V-11 CULTURAL RESOURCES

Policy:

The historical and archaeological resources of the Eagle Lake Planning Area are to be maintained and protected.

Implementation:

1. All proposed projects for development are to incorporate an appropriate level of archaeological reconnaissance to identify early in the planning process any prehistoric or historic cultural resources that might be effected by approval of the project.

2. Pursuant to the consultation requirements of the California Environmental Quality Act (CEQA) and the environmental review procedures of Lassen County, all project plans and proposals will be circulated for review and comment with the State Historic Preservation Officer and local Native American Heritage Advisory Committee to ensure that decisions on these matters will not adversely effect cultural resources.

3. All impacts on cultural resources must be mitigated to a degree commensurate with the significance of the resource and the potential degree of impact that will affect it. Mitigative strategies may employ measures of avoidance, protection or salvage (data recovery). Salvage would be least acceptable alternative only to be used if other options are not reasonably feasible.

V-12 RECREATION

Policy:

Recreational activities and uses are to continue to be of an outdoor and lake oriented character at a level and intensity in keeping with a quality recreational experience compatible with the maintenance of the unique values and environment of Eagle Lake.

Recreational facility development (i.e., campgrounds, picnic areas, recreational vehicle parks, marinas) should continue to be public in nature and held to those now in existence. Future demand for additional facilities, only if warranted, should be accommodated by the expansion of existing facilities prior to the development of new recreational sites as designated in the Plan. Private recreation is not to be precluded, provided that it is open to the general public. Any such expansion of existing facilities or new site development of recreational facilities will require an appropriate level of environmental impact analysis to ensure environmental protection and consistency with the policies of this Plan.

The development of golf courses within the Eagle Lake Basin would be inappropriate because of the potential for nutrient water polluting environmental impacts.

Prior to the development of designated hiking and/or equestrian trails in the Planning Area, an appropriate level of environmental impact analysis would be required to ensure that such uses would not be incompatible with the area.

V-13 COMMUNITY LAND USE

V-13-A Residential

Policy:

-Existing-

Allow the buildout of all existing lots and approved building sites in subdivisions approved by Lassen County for such purposes and the use of parcels for single family residential purposes in areas designated for residential use in the Plan. Such buildout is to continue contingent upon maintenance of environmental quality and the protection of public health as determined by the appropriate regulatory agency responsible for such matters.

The further division of lots in the existing subdivisions (i.e., Spaulding Tract, Stones Units 1-6, and Bengard) other than "lot line adjustments" shall be prohibited.

The placement and appearance of permanent residential structures and manufactured housing should serve to maintain and enhance the character of the setting and community in which they are located.

-Potential New Residential Subdivisions-

The following policies, plan proposals and standards shall be incorporated by new residential development projects at the specific locations designated for such use in this Plan;

1. New residential development shall be prohibited in areas designated and meeting the criteria of the Eagle Lake Basin Planning Study as having "high environmental sensitivity":*
 - a) Timber production and watershed management areas
 - b) Slopes equal to or exceeding 30 percent
 - c) "Crucial" and "highly-important wildlife habitat"
 - d) High geologic/seismic hazard potential
 - e) High erosion potential for disturbed soils
2. Residential development projects should include construction and sales of residential dwelling units and not be limited primarily to lot sales.

* It is recognized that given the level of detail and specificity of the data base used for the development of this area plan, new information and changes in public policy may dictate that amendments to this plan will be deemed appropriate based on site specific data submitted with project applications.

It should be understood that if a specific project is proposed in the future which is not consistent with the policy designations and/or provisions of the Area Plan, as it may then exist, a General Plan amendment application together with the development project application would be entertained as a complete project, through such public review and determination by the County as may be provided by law. (See introduction, page 2).

3. Residential dwelling units are to be detached (individual homes) and/or attached (condominiums, townhouses); structure height and silhouette is not to be disruptive to the setting.
4. The design and appearance of structures, appurtenances, landscaping and other improvements associated with residential development shall be visually compatible with the individual building site, as a part of the residential development project, and the general environmental setting of the area.
5. Minimize disruption of native vegetation and soils - all roads, bridges, retaining walls, structures and utility corridors to be constructed with a minimum impact on the natural vegetation. All disturbed lands to be revegetated and/or mechanically stabilized with natural appearing materials compatible to the setting.
6. Individual lot landscaping shall be compatible with the setting and comply with the State Fire Safe Guides of 1930.
7. Residential development shall comply with the fire safe provisions of the Public Safety Element of the General Plan.
8. Structures be designed to utilize natural forces such as sun, wind, rain and snow to best advantage and to minimize energy expenditures. Lot and structure orientation and design shall take advantage of passive solar heating and cooling.
9. Underground utilities as appropriate.
10. Design to provide for efficient and adequate provision of appropriate wastewater treatment, water supply facilities, and erosion and surface drainage controls.
11. Maximize retention of open space to attain goals of providing for levels and intensities of physical development that retain wildlife habitat, watershed and aesthetic values and the character of the project site and Planning Area:
 - a) Cluster dwelling units - each cluster of contiguous lots or units are to contain from 15% to 40% of the total number of residential lots or units of the development project.
 - b) Retain minimum of 80% of project site in open space ("high environmental sensitivity" areas of project site or under ownership of the applicant shall not be included in open space retention calculation). The open space area shall be specifically rezoned O-S, Open Space District. Such Open Space Districts shall be held in arrangements that ensure their intent and protection such as: owned in common undivided interest by all of the lot owners; owned by a homeowner's association; be dedicated to or acquired by a public land management agency; be owned by a private individual, group or entity. Other uses of the open space area may include: access routes between dwelling unit clusters, utility transmission,

facilities for sewage treatment and water supply, and equestrian trails and facilities.

- c) Allow dwelling unit intensity range of from less than 2.0 to 4.0 per acre contingent upon environmental, visual, and public services and facilities constraints and policies of this Plan.
 - d) Allow development option of very low density on entire designated project site for residential development lying outside of high environmental sensitivity areas as defined, minimum lot size 20 acres per dwelling unit. In such cases, the provisions of #11 a, b and c of this policy would not apply.
12. New development shall not result in the reduction of existing levels of local government operation, public services and facilities or cause excessive tax or fee increases to be imposed on area and County property owners to support it.
13. All proposed residential subdivisions will require the adoption of a specific plan for the entire project site prior to approval to ensure the implementation of the General Plan in the areas designated for development.

Implementation:

-Potential New Residential Subdivisions-

Applications for development of the sites designated for potential residential use will reflect the development option selected by the landowner/applicant pursuant to the standards and proposals of the residential development policy and the regulations of the applicable zoning district. The zoning districts applicable to the development options are P.C. (Planned Community), O.S. (Open Space), and R-1-B-20-D (Single Family Residential, minimum lot size 20 acres, architectural design control).

Applications for residential development project shall include an adequate level of fiscal and economic impact assessment detailing the public costs of the project, manner in which revenues are to be generated, entities to be formed, how services and facilities are to be provided and other applicable economic efficiency considerations.

The Planning Commission will determine if the provisions for the design and improvement of the proposed subdivision, land use and economic efficiency are consistent with the policies, guidelines and criteria of the Eagle Lake Area Plan. The rezoning of the project site should occur at the time of approval of the residential development application and specifically designate the land uses as approved.

Implementing the above guidelines and criteria, the designated potential locations for residential development could result in ranges of intensities¹ of development and number of residents² as follows:

Eagle Lake Estates, +890 acres (project site of subdivision application, portion of 1,374 acres owned by Eagle Lake Estates, "crucial wildlife habitat" portion was eliminated by the realignment of the "Heart Failure Grade" portion of County Road 201):

-
- 1. Measures of land use intensity include density, open space ratio, and impervious surface ratio.
 - 2. Factor derived from U.S. Census Bureau, 1980 Preliminary County for Enumeration District No. 266.

- a) 80% Open Space = 712 acres
 - 178 acres @ 2.0 DUI/AC 356 DU (787 res.)
 - 178 acres @ 4.0 DUI/AC 712 DU (1,574 res.)
- b) 20 acre minimum lot size per dwelling unit 44 DU (97 res.)

Heart Failure Grade, ±120 acres (portion of 1,374 acres owned by Eagle Lake Estates):

- a) 80% Open Space = 96 acres
 - 24 acres @ 2.0 DUI/AC 48 DU (106 res.)
 - 24 acres @ 4.0 DUI/AC 96 DU (212 res.)
- b) 20 acre minimum lot size per dwelling unit = 6 DU (13 res.)

Near Stones #5 and #6, Buck Bay, ±20 acres

- a) 80 % Open Space = 16 acres
 - 4 acres @ 2.0 DUI/AC 8 DU (18 res.)
 - 4 acres @ 4.0 DUI/AC 16 DU (35 res.)
- b) 20 acre minimum lot size per dwelling unit = 1 DU (2.21 res.)

Buck Point, ±140 acres (portion of 158 acres owned by Bertotti, et al):

- a) 80% Open Space = 112 acres
 - 28 acres @ 2.0 DUI/AC 56 DU (124 res.)
 - 28 acres @ 4.0 DUI/AC 112 DU (248 res.)
- b) 20 acre minimum lot size per dwelling unit = 7 DU (15 res.)

Fruitgrowers, ±480 acres (portion of site designated on 1968 Eagle Lake Area Plan, zoned R-1, excluding area designated "high environmental sensitivity"):

- a) 80 % Open Space = 384 acres
 - 96 acres @ 2.0 DUI/AC 192 DU (424 res.)
 - 96 acres @ 4.0 DUI/AC 384 DU (849 res.)
- b) 20 acre minimum lot size per dwelling unit = 24 DU (53 res.)

South of Gallatin Beach, ±135 acres

- a) 80% Open Space = 108 acres
 - 27 acres @ 2.0 DUI/AC 54 DU (119 res.)
 - 27 acres @ 4.0 DUI/AC 108 DU (239 res.)
- b) 20 acre minimum lot size per dwelling unit = 6 DU (13 res.)

South of Christie Beach, ±200 acres

- a) 80% Open Space = 160 acres
 - 40 acres @ 2.0 DUI/AC 80 DU (177 res.)
 - 40 acres @ 4.0 DUI/AC 160 DU (354 res.)
- b) 20 acre minimum lot size per dwelling unit = 10 DU (22 res.)

Development Option A:

Total potential new dwelling unit range = 794 to 1,588
 Total potential new residents range = 1,755 to 3,509

Development Option B:

Total potential new dwelling units = 98
 Total potential new residents = 217

-Design Review-

All lots in existing subdivisions that are designated for residential development in the Eagle Lake Basin portion of the Planning Area shall be zoned to incorporate "D" Design Control combining districts.

The following guidelines are to be used for the implementation of design policies and to serve as the basis for administrative criteria for review of individual building and new residential development project applications in areas or districts that are subject to design control. *

- a. Landscaping: The natural vegetative cover should be preserved or re-established to the extent feasible.
- b. Grading and Drainage: All grading should conform smoothly to natural contours. Alteration of natural grade should be minimized (e.g. cut and fills minimized). Avoid concentration of runoff waters.
- c. Exterior colors and finish of buildings: Color schemes for buildings are to be compatible with the setting utilizing tones and colors that appear harmonious with the site. Exterior materials, finishes and colors are to be non-reflective such as provided by the natural appearance of woods or stain finishes.
- d. Roof treatments: Shake, shingle and metal roofs are to be non-reflective with color compatible to the building and setting.
- e. Building heights: Structure height and silhouette should appear compatible on the natural landscape and integrate with the height of surrounding vegetation, rock outcrops, etc.
- f. Accessory buildings: Accessory or outbuildings should be minimized. Where needed, they should relate architecturally with primary buildings and/or be screened from view.
- g. Outdoor lighting: The light source of any exterior lighting fixture should not be visible from neighboring property. (Illumination of neighboring property should be avoided.)
- h. Fences and screening for residences: Rigid delineation of lot lines that is visually intrusive should be avoided. Service yards (e.g. garbage containers, clotheslines, etc.) should be visually screened, particularly in cluster developments.

* Refer to Eagle Lake Basin Planning Study, Volume 10, Visual Resource Analysis and Landscape Management for additional guidelines and criteria.

- i. Tanks: All fuel tanks, water tanks or similar facilities should be visually compatible and/or concealed so as not to be visible from roads or neighboring property. Such facilities are to have non-glare surfaces.
- j. Utilities: Above ground utilities should be minimized where allowed, telephone and power poles should be located along natural edges in vegetation, within forested areas, on opposite sides of roads from visual attraction, below ridge lines to avoid silhouetting on the sky line, and be raptor proof. The underground placement of power and telephone utilities is encouraged and should use common trenches under road shoulders where possible.

V-13-B Commercial

Policy:

Commercial uses and development in the Eagle Lake Planning Area should continue to be oriented to recreation and convenience shopping needs, goods and services of the lake residents, campers and day use visitors.

The appearance of commercial buildings and establishments are to be consistent with the character of the area. "Supermarket style" developments as typically found in urbanized areas would be inappropriate in the Eagle Lake Planning Area.

Existing commercial uses and proposed locations in the Spaulding Tract and Stones communities, Eagle Lake Resort and the Eagle Lake Marina that are designated in the Plan and zoned for such use should accommodate the commercial related needs around Eagle Lake for the planning period.

A proposed commercial "village-type" center is proposed to be located on the north side of the intersection of Eagle Lake Road and Gallatin Road at the south end of the lake. When developed, this site would serve as the recreational service center for the south portion of the lake with commercial uses including outlets and services such as a general store, recreation supplies, gas pumps and a restaurant. The complex is to be compact, incorporating architectural design and appearance that is harmonious and non-disruptive to the setting and character of the area. The planned adjoining recreational facilities could include housekeeping cabins, campgrounds and a recreational vehicle park. Development at all locations should be timed by need with regards to services already available locally as well as in Susanville.

Implementation:

All commercial locations as designated by this Plan should be zoned to incorporate "D", Design Control combining districts, to enhance the viability of the commercial uses and to ensure that the design and appearance of such uses are compatible to the setting and community in which they are located.

V-13-C SIGNS

Policy:

Signs when permitted should appear in character with the setting, be low in silhouette and/or be integrated into the structure.

Signs are to comply with the following criteria:

1. General

- a) No part of any sign shall extend onto or above the roofline of any attached structures.
- b) The top of all free standing signs shall not be higher than eight feet above natural grade.
- c) All signs should adhere to the same color and material guidelines which apply to structures. Allowances will be made for clarity.
- d) No more than 2 "for sale" or "for rent" signs with less than 4 square feet face area each will be allowed.
- e) All signs to be subject to design review as part of the use permit process.

2. Residential

- a) No signs shall be permitted except identification signs up to 3 square feet in face area and certain other temporary signs as noted herein.

3. Commercial

- a) No product advertising signs shall be permitted.
- b) All signs shall be either directional or identifying in nature and be less than 20 square feet in face area.
- c) Night lighting will be limited to those signs adjacent or attached to a permitted use and those for public safety.
- d) Contractors will be limited to a single identification sign less than 6 square feet face area posted during construction.

V-14 NOISE

Policy:

The occurrence and levels of noise from given sources should not exceed or conflict with the maximum acceptable noise levels for the various land use classifications as provided by the Noise Element of the Lassen County General Plan.

Implementation:

The Lassen County Sheriff's Department is responsible, under contract with the State Department of Boating and Waterways, for the enforcement of maximum allowable noise levels from motorboats as contained in the California Boating Law. Other agencies, i.e., Federal Aviation Administration and CalTrans, are responsible for the administration and enforcement of noise regulations relating to aircraft and motor vehicles.

All federal and state agencies having jurisdiction over noise regulations are encouraged to adhere to the standards specified in the Noise Element of the Lassen County General Plan.

V-15 TRANSPORTATION

V-15-A Airstrips

Policy:

Retain the Spaulding Airstrip at a Basic Utility I Classification with improvements limited to existing resurfacing and maintenance. Use of the Glenn Field Airstrip shall be discontinued, and there will be no additional facility development thereon or in any other area of the basin.

V-15-B Roads

Policy:

County. The improvement of the Eagle Lake Road (County Road 201) should occur as has been planned and programed. Future improvement of County roads should include provisions for bicycle lanes.

State. State Highway 139 should be modified or realigned to the most environmentally acceptable location when fluctuating lake levels threaten deterioration and inundation of the highway to the extent that the safety of motorists using the route is jeopardized.

Other Roads. Access rights to the route serving the Eagle Lake Youth Camp and the California State University, Chico, Field Station should be acquired by a public agency to serve those existing public facilities.

Off Road Vehicle Use. All vehicle use for recreation related purposes should be restricted to existing roads and jeep type trails. Off road vehicle and equipment use for administrative, fire protection, timber harvesting and agricultural purposes should occur only if such use is justified with regards to resource maintenance and protection.

V-16 SOLID WASTE DISPOSAL

Policy:

The appropriate level of solid waste disposal service for existing and future development shall continue to occur as provided by the Lassen County Solid Waste Management Plan, 1977. Additional capacity will be provided for by expansion of the existing transfer station method of disposal as needed.

V-17 SEWAGE TREATMENT

Policy:

The timing for development and method of wastewater treatment to be used

will be contingent upon the findings of evidence based on surveillance, monitoring and determination by the California Regional Water Quality Control Board, Lahontan Region, that such needs exist.

The service area boundaries of entities capable of managing sewage collection and treatment are to be established within the specific areas designated for development and in need of such provisions.

Implementation:

The Lassen County Health Department will continue to review all permit applications for individual septic systems for compliance with applicable provisions of ordinances and codes as condition of approval.

The United States Forest Service should continue the responsibility of managing their sewage treatment facility for public and private development on a contract basis at the south portion of the lake.

The California Regional Water Quality Control Board, Lahontan Region, is developing a specific water quality control plan for the Eagle Lake Basin. This planning process will culminate in specific planning policies including the setting of water quality objectives, an action plan for achievement of the objectives, and appropriate water quality requirements for existing and future development.

Interim measures to be taken prior to the adoption of the specific water quality control plan are described in the following excerpt of correspondence dated November 4, 1980 to Mark A. Totten, Lassen County Planning Director, from Roy C. Hampson, Executive Officer, California Regional Water Quality Control Board, Lahontan Region:

During the interim period in which we are developing the specific water quality control plan for Eagle Lake, we will take a very conservative and cautious approach in interpreting the existing plan as it relates to new development. This will mean that new projects must be supported by substantial documentation that resultant waste discharge will not directly or indirectly, individually or cumulatively adversely effect the quality of Eagle Lake Basin water resources. In some cases this will require sophisticated studies on biostimulation in lake waters and the ability of soils to remove key pollutants in waste discharges.

V-18 . WATER SUPPLY

Policy:

Appropriate water supply systems will be incorporated into existing and future development projects to ensure that water supplies are adequate in quality and quantity to provide the needs for domestic uses, fire protection, and not adversely affect fish and wildlife populations.

Implementation:

Existing and future water supply needs should be examined in conjunction with the groundwater studies to be performed under the Eagle Lake Water Quality Monitoring Program by the California Regional Water Quality Control Board, Lahontan Region.

V-19 UTILITY SERVICE

Policy:

All jurisdictions having control over land use and resources in the Eagle Lake Basin should cooperatively work with CP National and Citizens Utilities Company and others to ensure the efficient planning and provision of needed electrical power and communication services and capacities to the areas designated for development at a level commensurate with the growth policy of the respective agency. The design and provision of such services should incorporate mitigation measures that minimize environmental and visual impacts as well as energy expenditures.

V-20 POLICE PROTECTION

Policy:

The agencies having jurisdiction in enforcement and police protection services must cooperatively assist in monitoring the needs and providing the proper level of service for the public's safety and protection in the Planning Area.

V-21 FIRE PROTECTION

Policy:





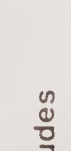










Adequate levels of fire prevention and protection services by the California Department of Forestry, U.S. Forest Service, Bureau of Land Management and the Spaulding Volunteer Fire Department and other volunteer type entities should continue to be provided.

Implementation:







The fire safe provisions of the Public Safety Element of the Lassen County General Plan are to be incorporated in all existing and new development to the extent feasible with the protection of natural resources.

LEGEND

CONSERVATION-RECREATION-OPEN SPACE

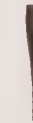




	HIGH ENVIRONMENTAL SENSITIVITIES		WILDLIFE HABITAT & NATURAL RESOURCE CONSERVATION AREAS		RIDING, HIKING & BIKE TRAILS
	MODERATE ENVIRONMENTAL SENSITIVITIES		TIMBER PRODUCTION & WATERSHED AREAS (includes wildlife habitat)		MARINAS WITH LAUNCH RAMP & MOORING
	HIGH ENVIRONMENTAL SENSITIVITIES		AGRICULTURAL AREAS (include wildlife habitat)		DEVELOPED CAMPSITES (79) Number of sites
	MODERATE ENVIRONMENTAL SENSITIVITIES		HIGH SEISMIC HAZARD AREAS		RECREATION BEACH
	OVERLAYS THE OTHER CATEGORIES		LAKE AND WATER RELATED HABITAT		SCENIC VISTAS & CORRIDORS




COMMUNITY LAND USE

	EXISTING RESIDENTIAL
	EXISTING COMMERCIAL
	POTENTIAL RESIDENTIAL (Dwelling unit intensity per acre)
	POTENTIAL COMMERCIAL
	INSTITUTIONAL USE
	COMMUNITY CENTER




PUBLIC SERVICES & FACILITIES

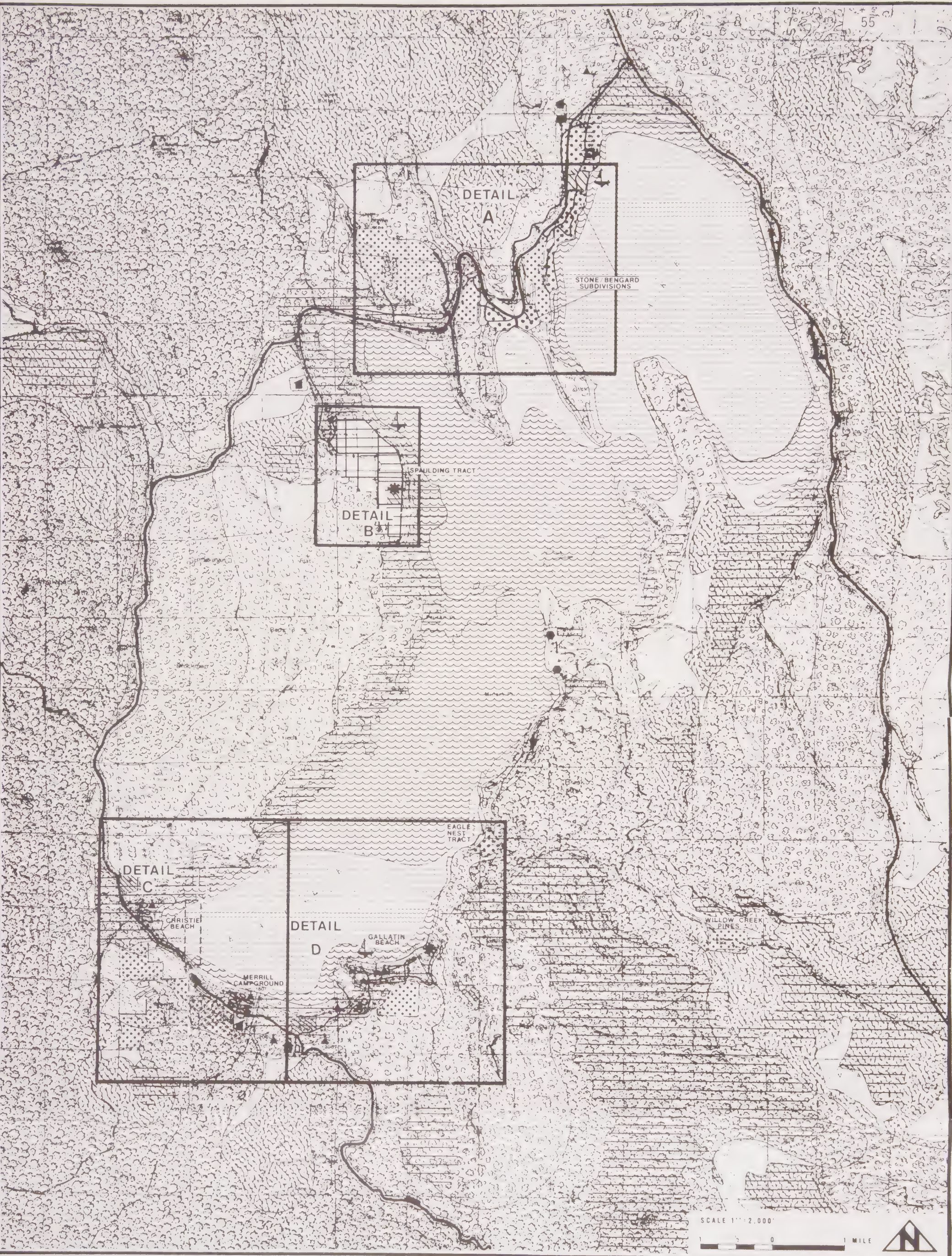
TRANSPORTATION:

	IMPROVED HIGHWAY OR COUNTY ROAD
	IMPROVED LOCAL COMMUNITY ROAD
	IMPROVED PARKING OR VISTA POINT
	IMPROVED GRAVEL ROAD
	SEMI-IMPROVED GRAVEL ROAD

	UNIMPROVED DIRT ROAD
	RIDING, HIKING & BIKE TRAILS
	PRIVATE AIR STRIP

SERVICES:

	FIRE STATION
	SOLID WASTE TRANSFER STATION
	POWER LINES



EAGLE LAKE AREA PLAN

1982

LEGEND

CONSERVATION-RECREATION-OPEN SPACE

HIGH ENVIRONMENTAL SENSITIVITIES

MODERATE ENVIRONMENTAL SENSITIVITIES

HIGH ENVIRONMENTAL SENSITIVITIES

MODERATE ENVIRONMENTAL SENSITIVITIES

HIGH ENVIRONMENTAL SENSITIVITIES

MODERATE ENVIRONMENTAL SENSITIVITIES

OVERLAYS THE OTHER CATEGORIES

HIGH SENSITIVITIES

MODERATE SENSITIVITIES

FRESH WATER MARSH

WILDLIFE HABITAT & NATURAL RESOURCE CONSERVATION AREAS

TIMBER PRODUCTION & WATERSHED AREAS (includes wildlife habitat)

AGRICULTURAL AREAS (include wildlife habitat)

HIGH SEISMIC HAZARD AREAS

LAKE AND WATER RELATED HABITAT

RIDING, HIKING & BIKE TRAILS

MARINAS WITH LAUNCH RAMP & MOORING

DEVELOPED CAMPSITES (79) Number of sites

RECREATION BEACH

SCENIC VISTAS & CORRIDORS

COMMUNITY LAND USE

EXISTING RESIDENTIAL

EXISTING COMMERCIAL

POTENTIAL RESIDENTIAL (DU 10) Dwelling unit intensity per acre

POTENTIAL COMMERCIAL

INSTITUTIONAL USE

COMMUNITY CENTER

PUBLIC SERVICES & FACILITIES

TRANSPORTATION:

IMPROVED HIGHWAY OR COUNTY ROAD

IMPROVED LOCAL COMMUNITY ROAD

IMPROVED PARKING OR VISTA POINT

IMPROVED GRAVEL ROAD

SEMI-IMPROVED GRAVEL ROAD

UNIMPROVED DIRT ROAD

RIDING, HIKING & BIKE TRAILS

PRIVATE AIR STRIP

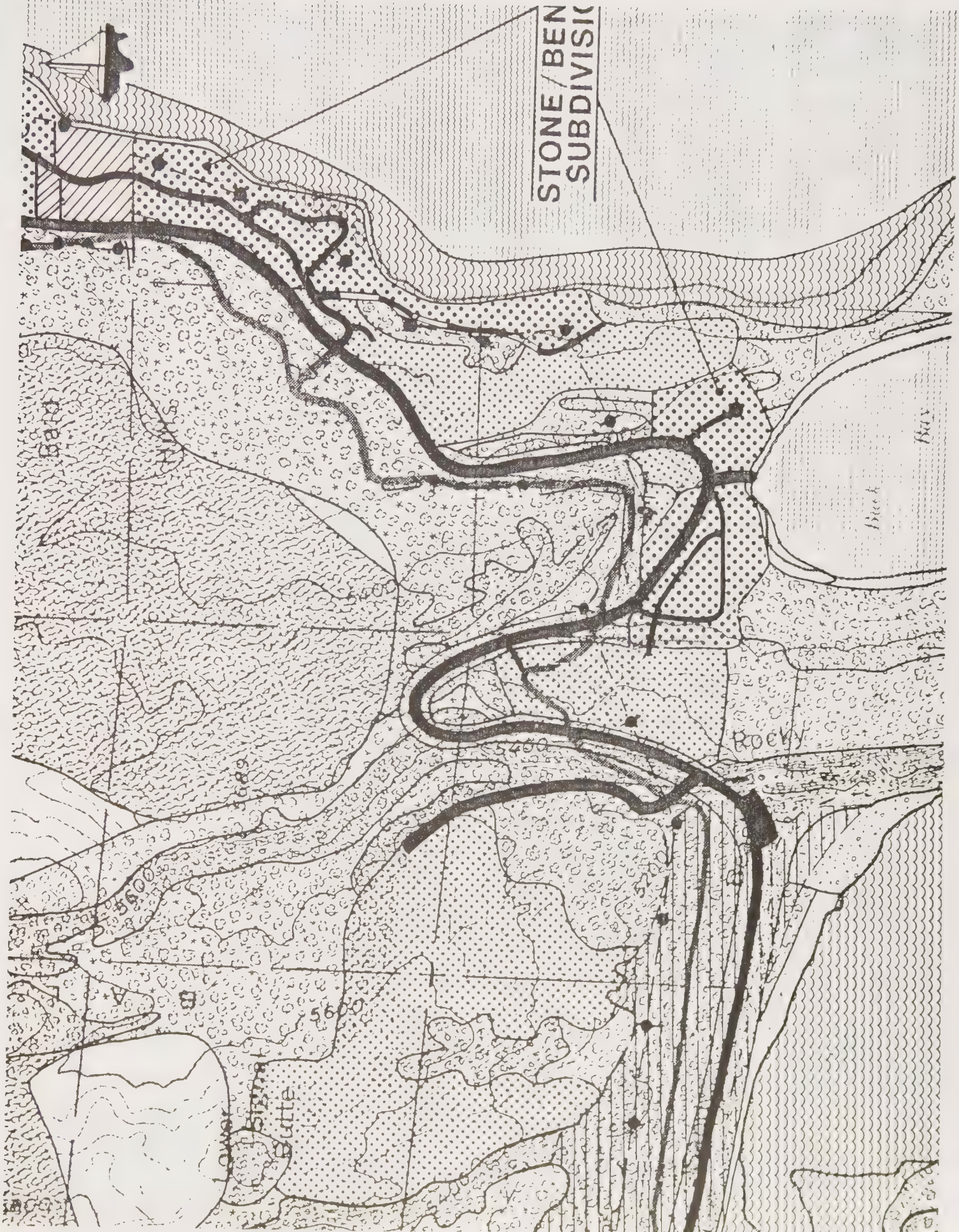
SERVICES:

FIRE STATION

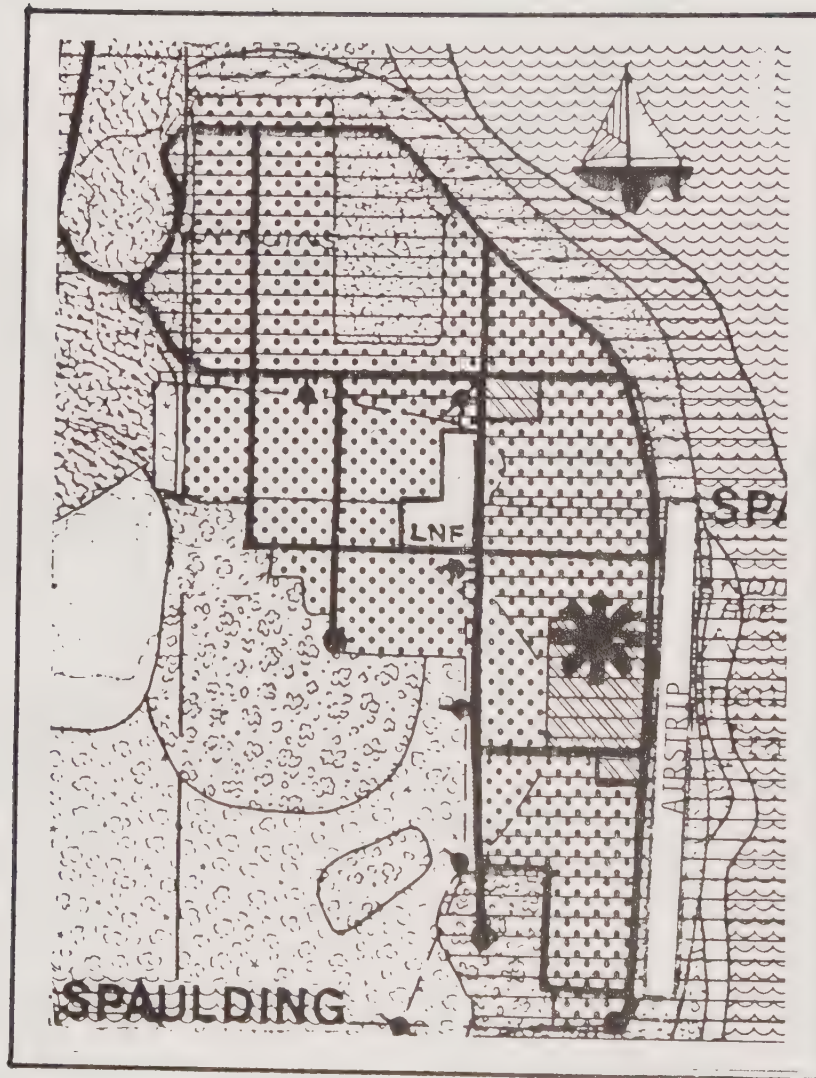
SOLID WASTE TRANSFER STATION

POWER LINES

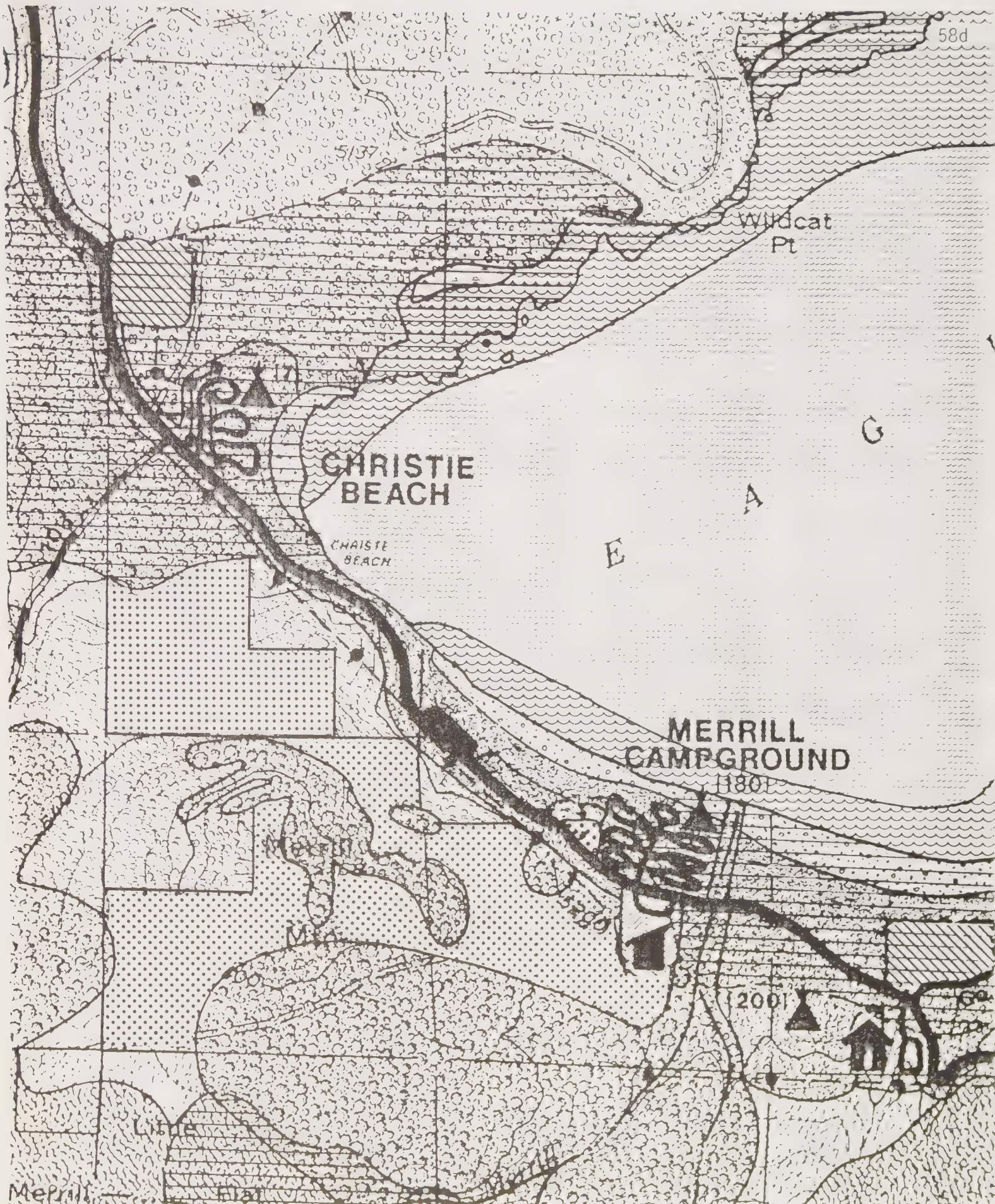
RVA RAYMOND VAIL AND ASSOCIATES
PLANNERS



DETAIL A



DETAIL B



DETAIL C



DETAIL D

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